JANUARY 10, 1924

THE RUBBER AGE

VOL. XIV. NO. 7

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THE RUBBER AGE

The Only Twice-a-Month Rubber Publication

VOL. XIV. JANUARY 10, 1924 No. 7

RUBBER ASSOCIATION MEETING AND BANQUET

Twenty-Fourth Annual Meeting and Banquet of Rubber Association at Waldorf-Astoria on January 7 Very Successful—Over 800 at the Banquet.

Fully 800 members and guests of the Rubber Association of America representing every branch of the rubber industry were present at the annual banquet held on the evening of January 7 at the Waldorf-Astoria Hotel in New York City. This was the occasion of the twenty-fourth annual banquet and meeting of the association.

In the afternoon about 100 firm representatives met at the annual meeting at which officers and directors were elected in addition to the handling of routine business and committee reports. This meeting was noteworthy for the masterful handling of all matters by Chairman W. O. Rutherford and for the fine spirit of fairness and good will which prevailed. Seldom has a finer attitude been taken by association members in their dealings with each other and the association is to be congratulated on this new spirit of mutual help and co-operation which is being shown on all sides. It augurs well for the calibre of men at the helm of the association and for the success of future ventures.

After briefly reviewing 1923 activities of the association the report of Treasurer Hodgman was submitted and approved. The full text appears elsewhere in this report. Following this report Mr. Viles stated that the General Manager's report of activities for 1923 was ready and every member received a printed report. One of the outstanding conditions developed during 1923 was the very decided increase in the number of individuals participating in the activities of the association, according to Mr. Viles. A plea was also made for an enlarged staff to take care of the natural and steady extension of association work. The report, which covers 30 pages, took up in detail the following matters which are not treated here in full but which are left for a later issue: Merchandizing conditions; Manufacturing conditions; Foreign trade; Cooperation with other organizations; Accounting; Statistics and other activities as excise tax on tires, extension of use of reclaimed rubber, rubber exhibit in Smithsonian Institute, expansion of sundries division, rubber restriction, international rubber exposition, traffic problems, etc.

Following this the crude rubber and tax committees reported. Mr. Hotchkiss stated that the report in full appeared in the General Manager's printed report but added that, in his opinion, crude rubber

RESULT OF RUBBER ASSOCIATION ELECTIONS

President, W. O. Rutheford.
First Vice-President, G. M. Stadelman.
Second Vice-President, C. B. Seger.
Treasurer, George B. Hodgman.
General Manager and Secretary, A. L. Viles.

ELECTED TO BOARD

For Three Years

G. E. Hall
W. F. Pfeiffer
A. L. Scheuer
C. B. Seger
C. T. Wilson

For One Year

E. H. Broadwell
J. C. Weston

SERVICE FOR THE RUBBER INDUSTRY

In order that those in the rubber industry who were unable to attend the annual meeting and dinner of the Rubber Association, and for the benefit of those who did attend, THE RUBBER AGE extended itself by insuring the insertion in this issue of the earliest report of the annual meeting and dinner. This issue should be in your hands five days after the date of the meeting, thus giving you the *first* complete news of this important happening. The material for this story was all gathered and written on the day of the meeting, the presses at our plant being held in readiness so that no time was lost in furnishing the industry with *news while it is still news.*

W. O. Rutherford—Re-elected President

C. B. Seger—2nd Vice President and Member of Board

Hon. Theodore E. Burton
Member of Congress from Ohio

DINNER MENU

Sea Tag Oysters
Clear Green Turtle Soup
Celery *Salted Almonds* *Olives*
Filet of Flounder, Joinville
Potatoes Parisienne, Rissoles
Breast of Guinea Hen, Complet
Hearts of Lettuce, Roquefort Dressing
Bombe Tutti Frutti Ice Cream
Assorted Cakes *Macaroons*
White Rock *Melachrino*
Cigarettes
Coffee

Hon. J. A. O. Preus
Governor of Minnesota

restriction had worked out well and that prices had been stabilized and no shortage had resulted. He believed that American rubber manufacturers as a whole had benefitted more than the producers.

The next report, that of the Tax Committee, showed how it had endeavored to secure removal of the excise tax of 5% on tires and auto accessories, a tax which amounts to $30,000,000 for 1923. Congressmen were being appealed to for support to secure its removal and all members were urged to exert their influence in this respect.

Directors for the following year and for three years were then elected. The results are given in the box on Page 245. Later the Board met and re-elected all officers of the association for another year.

Mr. Rutherford then spoke on a number of matters which he considered of great import to the welfare of the association and its members. Following are brief synopsis of the items mentioned.

Market Conditions—Rubber products were non-essentials during the war with some exceptions but today no rubber articles were non-essentials. All are staple merchandize sold in great volume in a highly competitive market. A deep study is required for this market for proper distribution.

Economy—Economy ought to be the keynote of the future. Overproduction capacity, now about 25%, is the greatest problem in the industry today. One dollar in rubber now buys more than in any other basic article of commerce. Prices are fixed therefore expenses are predetermined. This means economy must be practised in order that profits may be made.

Budgeting for Business Control—Budgeting for the government has saved hundreds of millions and can save millions for the rubber industry. This should be done with care and caution and preferably by a sales executive. Fix the budget from facts and regulate every conceivable department and expenditure.

Production—Avoid peak loads of production so as to give continual employment to workers and to help the institution as a whole. Avoid over-production.

Distribution of Merchandize—We have overextended our service to the trade and neither the trade nor the public wants it. Curtailment necessary at points of distribution. Buy needs in sufficient quantity so as to deliver at least cost.

Standardization and Simplification—During the war many types and sizes of rubber products were abolished but that lesson seems to be lost and that vision of simplification should be continued.

Profits—It is frequently said that business is good but that profits are poor. It has also been said that suffering purifies the soul. Therefore the rubber industry should be chemically pure. We should earn sufficient to pay dividends—an obligation of every firm.

Public Highways—The automotive industry has become first in size in two decades. Improvements in highways has contributed to health and happiness and rubber has played its part and we should be proud of the part taken by our industry in this new scheme of transportation.

New Uses of Rubber—We are a billion dollar enterprise and we ought to find new uses for rubber. I predict that new uses for rubber will create a business which will exceed the tire business. Splendid opportunities now exist to fill our plants with other articles of usefulness.

G. M. Stadelman—1st Vice President

Mr. Rutherford then mentioned a formula entitled "Ways and Means of Effecting Economy" which was to be presented at the meeting of the Tire Division.

No Judge Landis Needed

A departure from past annual meetings was instituted when discussion on a number of subjects of interest was held by leaders in the rubber industry. Mr. Hood spoke on Fundamental Accounting Principles and urged encouragement for the Accounting Committee in its task of developing a uniform accounting system for rubber manufacturers. Then Mr. Hood reviewed the organization of the rubber association and made a number of recommendations which will be given in detail in our next issue. One point prominently brought out was that no "Judge Landis" was needed for the rubber industry. Mr. Hood claimed that no super-man was necessary despite the proposal of Mr. DeLisser some time ago and the more recent suggestion of Mr. Wood for 6 men at the head of each subdivision of the industry.

Distribution

Seneca G. Lewis followed with a discussion on the Economical Distribution of Rubber Products during which he touched on trade discounts, the effect of the new policy of not publishing price lists on the non-descript and mail order tires, etc.

Publicity and Advertising

Mr. Rockhill spoke on the recent association plans for getting the proper credit for the industry by means of the Old Timer's Contest. The public has been taken into the confidence of the rubber manufacturers and on the matter of the

Representing The Great Rubber Industry of America

Photograph by Drucker & Baltes, N. Y.

NEARLY 800 MEMBERS AND GUESTS AT THE 24TH ANNUAL BANQUET OF THE RUBBER ASSOCIATION OF AMERICA, IN THE GRAND BALLROOM OF THE WALDORF-ASTORIA HOTEL, NEW YORK CITY, JANUARY 7, 1924

standard warranty, a saving of $26,000,000 was effected in 1923 and about 35% more was expected in 1924.

Spreading Good Will

Mr. Seger followed with an inspiring talk on Spreading Good Will and Optimism. He showed how up to 1920 the rubber industry was going along at high speed but in that year it had a disastrous wreck. He was surprised at the distrust but was glad to note that it was disappearing. He urged economy. "Let us create a good will," continued Mr. Seger, "a good will within ourselves. Loose statements of people in the industry were misconstrued by financial interests." He urged good fellowship on all.

Following these talks a motion was passed to continue the 3 cent per 100 pound tax on crude rubber and another motion to nominate the same number of members for the Board as is necessary to fill was tabled after much interesting discussion by Messrs. Seiberling, O'Neil, Kearns, Sawyer and Voorhees.

Just before the close of the meeting Mr. C. E. Wood addressed the meeting on "Matters to be Handled by the Rubber Association." His suggestions were briefly as follows:

1. Cost Accounting System for Manufacturers.
2. Complete engineering department to be maintained for help in designing, heating, tire equipment, etc., problems.
3. Create an organization for marketing obsolete sizes and dead stock.
4. Tax Expert to determine depreciation of machinery, etc.
5. Credit Bureau to investigate dealers and jobbers and to report on general credit conditions, terms of sales, etc.
6. Insurance Department to obtain reductions in rubber rates.
7. Legal Department to assist members in collecting delinquent accounts.
8. Development of Mechanical Appliances for rubber manufacturers, all improvements to be available to all members.
9. Complete Chemical Division for research work.

Annual Banquet

The dinner took place at 7 p. m. in the Grand Ballroom of the Waldorf. President Rutherford, who had the chair, read numerous messages of congratulation to the Association, these coming from President C. M. Candee of the Canadian Rubber Association, Senator Reed Smoot, Secretary of Commerce Hoover and the Rubber Growers' Association of London.

In his address of welcome Mr. Rutherford stressed the importance of the rubber industry and the progress made in the past and the bright outlook. While business generally was good, this was particularly true of the rubber business, he said. He then stated that the Association is on record as strongly favoring the Mellon tax reduction plan, and the enthusiasm with which the gathering acclaimed this remark bore ample testimony to its truth. "We strongly approve the Mellon plan," he said, "and heartily recommend its adoption by Congress."

In introducing the first speaker of the evening, Hon. J. Walter Drake, Assistant Secretary of Commerce, Mr. Rutherford asserted that the Rubber Division of the Department is working in close harmony with the Association and that this cooperation is being reciprocated by the latter.

Mr. Drake, on behalf of the Department, expressed appreciation of this cooperation and referred to the progress which had thereby been made in bringing about a more thorough knowledge of world rubber conditions. He said that the country is confronted with serious problems in the form of combinations in control of raw materials, particularly rubber. "It is our hope and belief," stated Mr. Drake, "that the interest and influence of the co-operatives in this mater, has succeeded in stabilizing the price of rubber. Things might have been much more uncomfortable had it not been for the co-operation of the Rubber Association in the Government's research." In concluding his remarks Mr. Drake said it is vital that we have an adequate supply of rubber at a fair cost, and he thanked the Association for its support.

Hon. Samuel R. McKelvie, former governor of Nebraska, was the second speaker of the evening. He spoke on problems of the farmer and economic conditions in the Middle West. He scored too much government regulation of and legislation for business. "Moreover," he said, "if there is any one thing that has hurt the farmer more than anything else it has been too much credit." He pointed out that the worst of this has been passed, however, and that everything at present indicates "the trend upward."

Hon. Theodore E. Burton, member of Congress from Ohio, then congratulated the rubber industry on its prospects for the coming year. He predicted an abundance of credit and easy money, but that the rubber industry will have to continue to ride on domestic demand, for the situation in Europe is bad. Three things will continue to make for prosperity in the rubber business, he said, these being the large and increasing use of the automobile, with the field ever broadening due to the high rate of suburban construction, and consequent need for automobile transportation, and construction of highways. He made a strong and enthusiastically received plea for reduced taxes, contending that taxes do not

Report of Treasurer for 1923

Exhibit A

STATEMENT OF INCOME AND EXPENSES YEAR ENDED DECEMBER, 31, 1923

General Balance as of Jan. 1, 1923		$205,059.77
Income		
Firm Dues	$10,373.45	
Affiliated Dues	1,854.21	
Initiation Fees	550.00	
Fees from Manufacturers	156,430.39	
Interest on Investments	9,461.19	
Interest on Bank Deposits	1,047.33	
Annual Banquet —1923 (Net)	91.53	
Total Income year ended Dec. 31, 1923		$179,808.10
Total Expenditures (Exhibit B)		176,202.31
Excess of Income over Expenditures year ended Dec. 31, 1923		3,605.79
Depreciation on Furniture and Fixtures (10% of $14,650.81)		1,465.08
		2,140.71
Balance as of Dec. 31, 1923—per Exhibit C		$207,200.48

Exhibit B

ANALYSIS OF EXPENDITURES YEAR ENDED DECEMBER 31, 1923

Administrative		
Office Salaries		$48,673.27
Overtime Expense		471.45
Stationery and Printing		4,042.71
Telephone and Telegraph		3,231.65
Postage		3,635.76
Dues and Subscriptions		678.77
Auditing and Statistics		964.63
Legal Expense		4,277.18
Repairs		231.72
Rent		10,098.88
General Miscellaneous Expense		6,574.88
Total Administrative Expenditures		$82,880.90
Divisional		
Auto Fabric	$451.16	
Foreign Trade	9,068.55	
Footwear	50.60	
Registration of Trade Names Abroad	$2,687.50	
Special Publicity	5,093.90	
Tire Abuse Poster in Cuba and Porto Rico	336.01	
General Division Expense	951.14	
Hard Rubber	171.38	
Mechanical Goods	437.26	
Rubber Coating	491.94	
Rubber Heel and Sole	35.88	
Rubber Proofers	827.59	
Rubber Reclaimers	106.42	
Rubber Sundries	891.77	
Tire Manufacturers	39,677.64	
Pamphlet—Care of Tires	$26,808.95	
Poster—Standard Tire Warranty	2,749.26	
Research	1,130.33	
Vehicle and Tire Test —		
Spec. Com.	1,902.64	
General Division Expense	7,086.46	
Accounting Committee	4,446.69	
Industrial Relations Committee	54.05	
Mechanical Specification Committee	365.36	
Traffic Committee	1,627.64	
Total Divisional Expenditures		58,703.93
Contributions		20,632.45
Special Expense—Crude Rubber Restriction		13,985.03
TOTAL EXPENDITURES		$176,202.31

Exhibit C

STATEMENT OF FINANCIAL CONDITION—DECEMBER 31, 1923

Assets		
Cash in Banks and on Hand		$ 3,781.35
Accounts Receivable		11,868.05
Investments		185,174.35
Accrued Interest on Investments		2,714.57
Furniture and Fixtures	$14,650.81	
Less Depreciation	10,988.65	3,662.16
Total Assets		$207,200.48

The Rubber Association of America, Inc. has no liabilities.

STATEMENT OF BOND INVESTMENTS —DECEMBER 31, 1923

Totals	$199,000.00	$185,174.35	$185,852.50

hit the rich man as they do the man of moderate means. "Tax is diffused over all the people in proportion to their consumption." He expressed himself as strongly opposed to the Soldier's Bonus, but his stand on this, while well received by his hearers, did not draw the applause accorded his view on tax reduction.

Governor Preus of Minnesota was the last speaker, and his talk which sparkled with the wit for which he is noted, was a fitting finale to a most enjoyable evening. Deploring the encroachments of socialistic theory and practice in certain parts of the Northwest he flayed the "short-haired women and long-haired men" who would undermine the institutions of our national life and character. "Socialism," he said, "means that the means of production are confiscated; it bites into the very heart of the church and the home." He painted a dismal, albeit humorous, picture of Russia under socialistic form of government, and called attention to the work of Secretary of State Hughes in trying to crush the insidious spread of communistic theory in this country.

To the banquet committee composed of H. T. Dunn, H. E. Sawyer and G. M. Stadelman much credit is due for making the dinner a huge success in every respect, and one that will long be remembered most pleasantly by those members and guests whose privilege it was to attend.

Members and Guests At Annual Banquet

A

M. R. Abbott, H. W. Alden, A. N. Alexander, M. W Alexander, A. Allen, W. P. Allen, E. A. Anderson, J. D. Anderson, W. D. Anderson, W. D. Anderson, Jr., G. F. Armstrong, F. L. Arnold, W. H. Arnold, W. C. Arthur, H. A. Astlett, H. G. Astlett, P. P. Ayer.

B

E. S. Babcox, *India Rubber Review;* F. H. Babcock, K. Babcock, THE RUBBER AGE; H. M. Bacon, R. Badenhop, G. W. Bailey, C. W. Baird, R. B. Baird, R. L. Baird, W. T. Baird, W. T. Baird, Jr., W. H. Balch, E. W. Balding, C. K. Baldwin, R. S. Baldwin, J. M. Ball, Roland Ballou, F. H. Banbury, M. Barbanell, L. J. Barber, A. Barrows, G. G. Bass, W. H. Bass, F. B. Batchelder, H. A. Bauman, R. Baybet, C. F. Beatty, F. V. Bechtel, L. A. Beecher, W. C. Behoteguy, Victor Behrend, Ray Bell, W. H. Bell, W. M. Bennett, E. Bernhardt, E. J. Bernhard, Aaron Bers, Paul Bertuch, G. H. Beymer, B. Bigelow, N. W. Biggart, E. D. Biggers, F. O. Billings, J. Birnie, J. J. Blandin, Vic. Blandon, E. J. Boehm, E. M. Bogardus, E. H. Bohlmann, R. H. Bollard, F. A. Bonstedt, A. O. Bourn, Jr., P. V. L. Bouton, W. Brady, F. L. Braender, L. W. Brander, N. J. Brewer, A. Brill, E. H. Broadwell, Hon. J. J. Broderick, Garret Brodhead, Jr., W. R. Bronk, E. H. Brooks, C. J. Broughton, A. H. Brown, C. A. Brown, L. A. Brown, R. Brown, L. A. Browne, F. S. Bruyn, W. E. Bruyn, Senator F. B. Burch, G. J. Burger, E. S. Burke, D. R. Burr, W. S. Burrill, S. G. Byam, A. E. Byke, Hubert Byke, F. L. Byrne.

C

J. R. Caldwell, E. R. Callaway, A. G. Cameron, G. B. Campion, M. L. Cannon, W. S. Carleton, Raymond Carter, C. C. Case, E. R. Cathcart, Mr. Chadwick, Joseph Chalfin, K. S. Chamberlain, Stanley Chamberlain, J. J. Chandler, M. E. Chester, C. C. Chestney, J. R. Chew, F. P. Choate, R. L. Chipman, C. B. Clark, C. S. Clark, F. B. Clark, M. E. Clark, C. F. Clarkson, A. B. Coates, J. H. Cobb, W. H. Cobb, James Cochrane, Dr. P. G. Cole, P. E. Collette, C. R. Collins, R. G. Conant, F. H. Cone, F. A. Connor, J. H. Connors, C. E. Cook, H. T. Cook, C. S. Cook, A. D. Cooley, S. A. Coombs, A. B. Cornell, R. H. Cory, E. J. Couglin, J. H. Courtney, R. R. Cowen, D. F. Cranor, J. M. Cranz, B. B. Craver, E. O. Cummings, H. H. Cummings, W. L. Cummings, C. M. Curry, D. A. Cutler, W. F. Cutler, W. O. Cutter.

D

W. R. Dalton, D. J. Daly, F. S. Dane, G. W. Daum, H. Davila, Poncet Davis, B. H. Davis, C. J. Davol, T. B. Dean, R. L. de Brauwere, E. C. DeLanie, H. S. DeLanie, H. B. Delapierre, B. DeMattia, T. A. Desmond, C. F. Devine, W. H. Dickerson, F. S. Dickinson, S. L. Dodd, R. L. Dorr, H. S. Doty, William Doucette, S. A. Douglas, Hon. J. W. Drake, R. R. Drake, W. A. Drisler, G. B. Dryden, Major R. H. Duenner, L. W. Dumont, F. W. Dunbar, J. F. Dunbar, J. Frank Dunbar, Jr., W. W. Duncan, W. B. Dunlap.

E

R. H. Eagles, W. P. Earle, Jr., E. R. Early, W. T. Easley, R. W. Ebling, Frederick Edel, W. A. Eden, Paul Elbogen, J. B. Elliman, H. W. Emery.

F

E. E. Fay, J. W. Fellows, D. H. Fenton, Frank Fenton, H. Fera, H. F. Field, E. K. Files, N. P. Fillingham, E. S. Finch, H. G. Fisk, E. H. Fitch, F. B. FitzGerald, George Flint, H. A. Flint, F. C. Foley, F. F. Fox, M. S. Fox, A. W. Francis, A. A. Frank, R. E. Frazer, Carl Frederick, Albert Freedlander, H. W. French, E. L. Fries, George Friedman, C. L. Fulkert, H. P. Fuller, R. L. Fuller.

G

T. M. Gardner, C. D. Garretson, A. A. Garthwaite, J. W. Gaskill, H. E. Geib, H. G. Gerdes, R. M. Gibson, H. R. Gill, R. E. Glass, H. A. Githens, W. H. Gleim, A. A. Glidden, R. H. Goebel, D. M. Goodrich, A. R. Gormully, J. C. Gould, F. W. Green, F. H. Greene, N. L. Greene, G. B. Griffin, R. T. Griffiths, A. C. Grimley, J. F. Grocock, E. C. Gruehle, Alexander Guttman.

H

J. C. Haartz, D. D. Haldane, B. T. Hall, G. E. Hall, H. T. Hall, W. W. Hall, Ira Hamilburg, R. S. Hamilton, J. L. Handy, H. B. Hankinson, H. C. Hanson, H. J. Haon, W. F. Harrah, S. W. Harris, W. Harris, C. W. Harrison, Dr. Harrison, Kennedy Hassenzahl, H. A. Hauser, Lester Haynes, H. T. Helm, C. W. Helman, M. L. Heminway, B. W. Henderson, F. R. Henderson, H. H. Henderson, H. M. Henderson, W. M. Henry, W. H. Hermann, J. W. Heron, L. O. Heyworth, C. G. Hill, Carl Hitchcock, L. H. Hoag, *India Rubber World;* F. M. Hoblitt, F. A. Hodgman, G. B. Hodgman, S. T. Hodgman, J. Hoerger, Mr. Holcombe, H. Holcombe, J. K. Holgate, J. C. Holmes, M. G. Holstein, F. C. Hood, M. G. Hopkins, Ernest Hopkinson, Fred Horn, H. S. Hotchkiss, E. G. Howard, C. J. Howell, S. A. Howell, G. E. Huggins, W. G. Hunter, C. R. Hurd.

J

Jules Jaccard, E. Jacoby, C. J. Jahant, William Jameson, C. S. Jamison, R. R. Jennings, A. B. Jerellius, C. A. Jessup, R. T. Johnson, O. S. Johnson, S. H. Johnson, W. A. Johnson, W. L. Johnssen, F. A. Johnston, J. T. Johnstone, B. M. Jones, E. G. Jones, H. T. Jones, J. F. Jones.

K

S. F. Kahnheimer, C. B. Kaufmann, Carl Kavenagh, William Kavenagh, John Kearns, C. F. U. Kelly, J. H. Kelly, T. J. Kelly, W. J. Kelly, W. S. Kelly, Jr., C. D. Kennedy, H. M. Kerr, H. A. Kiep, J. C. Kimball, T. F. Kimball, D. H. Kinloch, J. W. Kinsman, M. J. Kirby, W. J. Kirkpatrick, A. F. Kitchel, Robert Knobloch, Otto Kracht, H. P. Kraft, G. D. Kratz, C. Kueche, A. D. Kunze.

L

M. C. Lachenbruch, F. T. Lahey, E. W. Laird, R. W. Lampman, F. L. Lamson, R. A. Landers, V. Larsen, E. Larson, Irving Laurie, G. L. Lavery, F. M. Leahy, D. A. Lederer, A. A. Leiser, Jr., S. G. Lewis, Leo Ley, Leo Lichtenstein, E. V. Lightner, H. J. Lincoln, H. A. Lindsey, T. S. Lindsey, A. G. Lingley, H. B. Link, Lomax Littlejohn, Jr., R. M. Littlejohn, I. J. Louis, Joseph Louis, F. W. Lovatt, J. S. Lowman, H. G. Lubke, W. L. Lyall.

Mc

W. J. McCanley, H. L. McClaren, W. C. McConnell, J. S. McCrea, C. P. McDonald, R. B. McGaw, J. F. McKee, F. R. McKenna, J. F. McLean, William McMahan, J. A. McNulty, L. A. McQueen, James McVey.

M

H. A. MacKusick, L. P. MacMichael, Mr. MacPhillips, J. W. Macomb, J. F. Maloney, A. A. Manchester, Jr., A. N. Mann, T. A. Maguire, B. E. Marean, M. A. Marquette, H. L. Marsh, T. C. Marshall, H. T. Martin, J. S. Marvin, J. H. Mason, T. M. Matchett, J. W. Matthaei, G. H. Mayo, F. S. Mead, Jr., Harry Meixell, Adolph Meyer, A. L. Meyer, E. T. Meyer, Otto Meyer, W. C. Meyer, Paul Meyerfeld, A. C. Meyers, Thomas Midgley, C. E. Miley, Murray Millenthal, C. E. Miller, E. F. Miller, I. L. Miller, T. W. Miller, W. B. Miller, F. C. Millhoff, Gordon Milne, R. L. Mitchell, K. Miyazaki, D. A. Mock, C. L. Moody, J. A. Moore, John Morgan, C. A. Morse, W. M. Morse, *India Rubber World;* H. G. Mortland, Harold Morton, A. D. Moss, J. V. Mowe, H. Muehlstein, J. Muehlstein, Louis Mueller, W. F. Mullen, C. W. Muller, C. W. Murdock, P. A. Murphy, W. C. Murphy, C. E. Murray, Jr., J. D. Murray, R. E. Murray, E. V. Myers, F. F. Myers, W. E. Myers.

N

A. F. Nazro, F. G. Neal, J. Nesbit, E. C. Newcomb, A. B. Newhall, Arthur Newman, Stanley Newman, F. B. Nickel, N. S. Noble, T. J. Northway.

O

C. H. Oakley, P. H. Ober, J. F. Oberwinder, L. G. Odell, N. E. Oliver, Dr. Olmstead, Joseph O'Mara, William O'Neil, George Osborne, W. Osgood, Henry Otte, R. D. Ottignon.

P

R. H. Paddock, Hutcheson Page, J. F. Palmer, P. L. Palmerton, E. A. Pam, A. L. Pardee, W. H. Parkin, R. A. Parrett, A. G. Partridge, R. W. Patrick, C. B. Patterson, D. A. Patterson, Stephen Peabody, F. H. Peaty, R. A. Peavey, G. E. Pell, Henry Perlish, G. E. Perry, J. Q. Perry, E. V. Peters, G. L. Peters, F. B. Peterson, H. L. Pettingell, J. J. Peugnet, W. F. Pfeiffer, H. E. Phelps, A. D. Phillips, E. Phillips, J. H. Phillips, Peter P. Pinto, THE RUBBER AGE; L. J. Plumb, Richard Poeplitz, H. V. Pohle, G. A. Polsey, John Pontin, S. S. Poor, E A. Pope, F. A. Pope, B. H. Pratt, Walter Prosser.

R

W. H. Rankin, H. P. Reader, H. A. Reed, Alfred Reeves, E. C. Reuter, E. E. Rice, E. L. Rice, R. L. Rice, F. B. Richardson, J. H. Richardson, W. Richardson, E. L. Rimbault, J. A. Rishel, F. T. Roberts, J. A. Roberts, M. Roberts, J. T. Robinson, F. W. Roche, L. C. Rockhill, J. S. Rodenough, Mark Roe, O. J. Rohde, C. H. Roper, M. Rothschild, J. E. Rousmaniere, J. W. Rowland, H. S. Royce, W. O. Rutherford, F. S. Rutter, L. Ryan.

S

E. M. Salzberg, W. W. Sanders, C. W. Sanderson, E. Satchell, J. A. Savett, A. M. Sawyer, H. E. Sawyer, J. D. Sawyer, T. A. Sawyer, G. L. Scheinler, A. L. Scheuer, A. Schulman, Joseph Schweizer, F. A. Seaman, J. N. Searle, C. M. Sears, C. B. Seger, C. W. Seiberling, Jr., F. A. Seiberling, McConnel Shank, F. W. Sharts, J. A. Sheridan, G. E. Shipway, D. A. Shirk, S. T. Shoneman, G. S. Shugart, E. H. Shurtleff, Jack Sider, G. A. Sigel, B. R. Silver, H. W. Slauson, Cliff Slusser, C. H. Small, Arthur Smith, G. A. Smith, H. O. Smith, H. W. Smith, J. A. Smith, T. E. Smith, W. T. Smith, D. D. Smithyman, Dr. A. A. Somerville, L. N. Southmayd, G. W. Spahr, Dr. David Spence, F. V. Springer, T. Spurr, G. M. Stadelman, A. W. Stedman, J. H. Stedman, G. W. Stephens, William Stephens, Fred Stern, W. H. Stiles, L. D. Stiles, C. E. Stokes, J. G. Stoller C. F. Stone, R. M. Stuart, C. J. Sullivan, F. J. Sullivan, C. P. S. Sutherland, J. H. Sutherland, H. H. Swan, E. C. Sweeney, E. C. Sweeney, Jr., G. R. Sweeney, Maurice Switzer.

T

J. A. Talbot, A. V. W. Tallman, A. F. Tallmer, C. H. Taveniere, M. D. Tenney, S. P. Thacher, L. H. Thomas, V. G. Thomas, E. W. Thompson, K. J. Thompson, Maurise Tingley, M. H. Tisne, F. E. Titus, R. L. Tonner, G. Townsend, L. M. Trafford, F. Trismen, Percival Trudeau, Quincy Tucker, H. M. Turner, M. A. Turner, W. H. Turner, O. S. Tweedy, E. K Twombley.

U

H. F. Utley.

V

J. M. Van Alst, L. T. Vance, F. C. Van Cleef, A. Van Gelder, C. V. Van Kleeck, H. C. Van Ness, B. E. Van Riper, L. M. Van Riper, J. Volckhausen, E. McC. Voorhees.

W

G. A. Waddle, R. E. Waldo, E. D. Walen, Herbert Walmsley, F. D. Wanning, E. A. Ward, A. W. Warren, L. A. Watts, Hermann Weber, E. C. Webster, P. S. Weeks, Harry Weida, I. B. Wells, J. C. Weston, C. R. Wetsel, C. H. Wheeler, S. W. Wheeler, C. M. White, Jr., Windsor T. White, W. T. White, H. W. Whitford, J. W. Whitehead, William Whitenack, W. W. Whiting, W. T. Whitlock, E. E. Whitman, Richard Whitman, W. H. Willennar, C. S. Williams, F. A. Williams, G. M. Williams, Harvey Willson, E. G. Wilmer, C. T. Wilson, W. E. Wilson, C. S. Winch, P. T. Wise, A. D. Wismar, W. D. Wissell, C. E. Wood, John R. Wood, Roy Wood, H. J. Woodard, R. B. Woodbury, V. L. Woodward, Samuel Woolner, H. D. Worthington, I. A. Worthington, W. E. Wright, B. F. Wulff.

Y

D. D. F. Yard, H. N. Young, John Young, P. E. Young.

Z

F. Zech.

RUBBER ASSOCIATION DECEMBER ACTIVITIES

Minimum Quality Standards for Rubber Radio Sheet—Service Managers Committee Enlarged—To Make Survey of Dealers' Inventories

A meeting of a Sub-Committee of the Hard Rubber Manufacturers Division was held at the Yale Club, New York City, on December 14th, to prepare uniform tests for hard rubber radio sheet, in connection with the efforts of the Division to establish minimum quality standards for such goods. Material progress was made and the Sub-Committee hopes to be able to submit definite recommendations to the Division early in January. This action, in conjunction with an educational campaign emphasizing the advantages of hard rubber over other materials commonly used in radio work should offset the erroneous impression gained by some fans who have used inferior grades of sheet that hard rubber is not as good as some other compounds for radio purposes.

The Specification Committee—Mechanical Rubber Goods Manufacturers Division of the Association held a regular meeting at the Yale Club, New York on December 18th. A very interesting discussion was had with Mr. P. L. Wormeley, Chairman of the Rubber Goods Committee of the Federal Specifications Board, at Washington, concerning the present status of the tentative Federal requirements for packings and the extent to which individual departments of the Government are adhering to the Board's approved specifications for rubber hose, which were jointly formulated by the Specification Committee and Mr. Wormeley's Committee.

The Committee also gave its attention to the specifications issued by individual railroads throughout the country which are at variance with the "Recommended Practice" Standards of the American Railroad Association, with a Sub-Committee of which the Rubber Association body has been co-operating for the past three years. The members present at this session indicated that the carriers are gradually adopting the A.R.A. requirements, which should prove beneficial to not only the railroads but the manufacturers as well, as it is fundamental that the use of standard requirements by purchasers who buy such large quantities of rubber hose and belting is a much more desirable and economic condition than has prevailed in the past, when each and every railroad had its own individual and distinct specifications.

The Executive Committee—Tire Manufacturers Division held its December regular meeting at the Lotos Club, New York, on December 19th. The standardization of oversize low pressure tires for existing standard rims was discussed and it is expected that a definite recommendation thereon will be issued to members of the Division in the very near future.

There were three subjects referred to the Tire & Rim Association for consideration and its recommendations, viz., a schedule of load carrying capacities and inflation pressures for balloon tires; the standardization of inner tube valves; and the replacing of the 26x3" motorcycle rim contour by the 3" passenger car rim contour.

The Executive Committee approved the plan to enlarge the Service Managers Committee to embrace a larger number of individuals connected with members of the Division, which, it is believed will assist in strengthening the support accorded to the Standard Tire Warranty. The Service Managers Committee as a whole will doubtless meet quarterly, while an Executive Committee thereof will meet monthly.

The Service Managers Committee presented recommendations for the further improvement in adjustment conditions, which are endorsed in principle by the Executive Committee and returned to the service men for a definite program, which will be considered at the annual meeting of the Tire Manufacturers Division scheduled to be held at the Yale Club, New York, on Tuesday January 8, 1924, which is the day following the Annual Meeting and Dinner of the Rubber Association proper.

The Executive Committee was informed of the approval of the Board of Directors of the Association of the plan to make a survey of tire dealers' inventories as of April 1st, 1924, and plans will be made immediately to progress this work.

The Committee was informed that the National Tire Dealers Association has indicated a desire to confer with a committee representing the Tire Manufacturers Division respecting the resolutions adopted at the Fourth Annual Convention held in New York in November.

The Chairman was authorized to appoint a Sub-Committee to discuss the resolutions with the dealers' organization.

RUBBER INDUSTRY ALONE GAINS

Only the rubber and tire industry in and around Akron showed improved conditions during November, according to the monthly summary of industrial conditions in Ohio by the Department of Labor. Other industries showed a slowing down, and there is considerable unemployment, only about 50 per cent of the state's quota being employed. Rubber companies, on the other hand, increased their working forces generally.

Rubber From New Source Soon?

As a result of investigation by the Department of Commerce into new sources of rubber production it is said that rubber experts are predicting shipments from these sources within the next six months. Details, however, have not yet been disclosed. It is also reported that "several Akron rubber experts" will go to Washington in the next few months to assist the department in classifying all data gathered during the investigation.

U. S. RUBBER INCREASES MECHANICAL GOODS 10%

Reports from Boston state that as of January 1 forward prices on all mechanical rubber goods, into which cotton, duck, sheeting and yarn enter largely, have been raised 10 per cent in price by the United States Rubber Company. Just before the close of the year the company withdrew prices on these lines. No change in prices of articles manufactured almost entirely of rubber were announced. The advances were responsive to rising prices for cotton yarn.

U. S. Rubber Takes Lease

The United States Rubber Company has signed a 20-year lease for a building at 133 Swan St., Buffalo, N. Y., which is being remodeled and will be ready for occupancy about May 1.

Woonsocket Gives Bonus

Approximately $60,000 was paid in bonuses to 1,900 employes of the Alice Mill and the Millville, Mass., plant of the Woonsocket Rubber Company, Woonsocket, R. I. The sum distributed was computed on a basis of 5 per cent of the payroll beginning June 15 and December 15, 1923.

Goodyear Denies German Labor Flood

Reports to the effect that several thousand German workers will be brought to this country for employment in the new Zeppelin plant of the Goodyear Tire and Rubber Company at Akron have been denied by P. W. Litchfield, vice-president of the company. According to Mr. Litchfield only a few Zeppelin experts from Germany will come to Akron to assist in the building of the aircraft. Outside of these all other help in the new enterprise will be recruited from the ranks of Akron labor.

Portage Trustee Loses Suit

A jury verdict denying the right of trustee of the Portage Tire and Rubber Company, formerly of Barberton, to collect alleged damages from the Portage Rubber City Clearing House was returned against George D. Bates, trustee in bankruptcy for the Portage company.

Bates' claim was based on the allegation that the clearing house had entered contract with his company prior to December 1919, to dispose of all the company's "second" tires, and had then failed to accept shipments made. These the company took back and later sold at a loss, it was claimed. A. H. Noah was claimed to have delivered five carloads of second tires valued at $121,756.13 to the clearing house, which were refused and then sold at a loss of $34,787.46, and a later carload was sold under similar conditions at a loss of $4,785.98. A second claim on an unpaid note for $1,086 was held as a valid account and the clearing house ordered to pay it.

AIR-FLOATED CARBON BLACK NOW PRODUCED

New Process Is Said to Remove All Impurities Thus Making it An Ideal Product for Use in Rubber Products.

An item of great interest to all rubber manufacturers is contained in the current announcement of J. M. Huber, Inc., carbon black manufacturers, that they have perfected a new refining process to remove grit, scale and foreign matter from carbon black by floating it on air.

According to the manufacturers, the usual method of bolting black, at plants where bolting is practiced at all, is by means of an apparatus similar to a Chilean mill in appearance, the black being forced through a screen bottom in a horizontal pan-shaped container by rotating brushes. This results in a tendency toward a grinding action rather than a sifting action, so that iron scale and other foreign matter may be actually ground through the screen, causing considerable trouble in the finished product. The brush action frequently slits or wears through the screen bottom, allowing all the oversize to pass into the finished product for some time before the damage is discovered. The new air-flotation process, developed by the Huber engineers, is described as actually lifting the finest and most uniform particles on a flowing stream of air, the grit being rejected by a special centrifugal action. As a double safeguard, all the air-floated particles are passed through a fine mesh screen which is not subjected to any grinding action.

It is claimed that this process, in addition to an actual and positive elimination of grit, yields a very finely textured product of superior advantage for rubber work, and that tests have shown a quicker and more complete dispersion in grinding with rubber. It is also said that the air-floated blacks produce a resilient quality heretofore lacking in most carbon black rubbers. The explanation offered is that internal friction is reduced by virtue of the extreme fineness and uniformity of particles. This feature is of interest particularly to the manufacturers of solid rubber tires and other products where a deleterious heating effect has been noticed in most rubbers manufactured with carbon black.

It is encouraging to note that a carbon black manufacturer has taken the initiative in pursuing a comprehensive technical study toward the improvement of the product for the specialized use of rubber manufacturers. The large Huber plant at Swartz, Louisiana, has been favorably commented upon by engineers who have inspected it, and its efficiency was the subject of a special letter of commendation from a representative of the Louisiana State Conservation Commission. A prominent consulting industrial engineer who visited the plant stated that it was the only one in existence where production quality was entirely controlled by precision instruments, rather than by manual methods.

MISS BRODY TOOK A CHANCE—

Can a girl nowadays go into a large city, friendless, unskilled and with only enough money to keep her a week, and in that time get work? Can she exist, and if so, with what comfort, on the wages paid to unskilled workers? Will she find the conditions of such work tolerable?

She can, she will and she has, according to Miss Catherine Brody, reporter on the *New York World*, whose editor gave her the "assignment" of trying out the experiment in twenty large cities.

Starting out with only $10, and some clothing, Miss Brody went to Boston where, the first day she landed her first job, that of an "upperer" at the Malden plant of the Boston Rubber Shoe Company, subsidiary of the United States Rubber Company.

She put in a week at the bench, at the end of which time she reached the following conclusion:

"Were my working conditions tolerable? They were model conditions—the Utopian ideals of twenty years ago."

May Pay Smith Wage Claims

Owing to settlement of mortgage and Federal claims it is believed that former employes of the Smith Rubber and Tire Company, Garfield, N. J., which failed about a year-and-a-half ago will receive back wages in full, according to trustee William L. Brunyate. The Government and Mortgage claims were not allowed in full and this left enough to take care of the labor claims.

Paul Rubber Dividend

Directors of the Paul Rubber Co., Salisbury, N. C., have declared a stock dividend of 10 per cent on the common stock and an extra participating dividend of 2 per cent on the preferred, payable January 10 to holders of December 31 record. The company reports a surplus of $63,000 after payment of dividends of approximately $35,000 paid up to October 1.

Accessory Dealers' Smoker

On Thursday, December 20th the annual December Smoker of the Automobile Accessories Business Association was held in the rooms of the Philadelphia Automobile Trade Association, Broad and Callowhill Sts. The feature of the evening was the vaudeville entertainment. Over 100 members were present.

A dinner at 6.30 started the evening. Following this was the business session which was made appropriately short. The vaudeville entertainment was of high caliber and smokes were generously distributed. At this meeting the officers elected the previous month, occupied their chairs for the first time, C. Harry Walz, president, being in the chair.

RUTHERFORD LOOKS FOR GOOD YEAR AHEAD

Rubber Association Head Sees No Cause for Pessimism—Coming Auto Shows Will Reveal Ambitious Plans—Rubber Industry Takes Marked Change for Better

It is difficult to see how any business man in America can be anything but an optimist as to the outlook for 1924. According to W. O. Rutherford, President of the Rubber Association of America, and vice President of the B. F. Goodrich Rubber Company.

"While it is true that there has been a marked reduction in prices in the products of many industries, this has been more than compensated for by steady and enlarged production. The coming Automobile Shows in New York, Chicago, Boston, Philadelphia, and other cities, will show the ambitious plans that have been made by this, probably the most influential industry in America, and should convince any skeptic that the road to greater prosperity lies straight ahead," said Mr. Rutherford.

"The entire country has, I think, got down to a solid business basis. Wages are higher, bringing a marked rise in prosperity to the greater number of our people. And industry has welcomed the higher wage era by a determined and successful effort at economy of operation, reduction of overhead costs and increased quantity and quality of product which has rebounded enormously to the benefit of the consumer.

"Perhaps no industry has been required to face such markedly changed conditions as the rubber industry. Prices have gone down as quality and endurance of products and wages have gone up, and yet by sane and well-thought readjustments, by increased efficiency in manufacturing—in which the higher-priced wage workers have loyally helped us—by intensive sales and advertising campaigns, we are able to render better service than ever before.

"How plentiful money is just now may be judged from the fact that during the month of November the value of leading stock issues rose from $11,776,000,000 to $12,460,000,000, an increase of $648,000,000. This means an advance of $3,000,000,000 from the lowest level of the 1921 depression. In the face of figures such as these, it is no wonder that the pessimistic fear of an approaching depression has vanished, and there can be no doubt but that the outlook for substantial business and profitable levels during the coming years is brighter than it has been for years."

Budd Makes Balloon Rims

The Budd Wheel Company of Philadelphia is now engaged in making Michelin disc wheels with 20-inch rim base for balloon tires for thirty-five different makes of automobiles. It is reported that the company will shortly be ready to supply the 21-inch rim base to conform with tentative standards adopted recently.

OUTLOOK FOR 1924 IS BRIGHT, SAYS HOOVER

Sees Continued Prosperity Based on Complete Employment, High Production, Financial Strength and Spirit of Prudence —Finds General World Situation Hopeful

The economic outlook for our own country for the next year is bright, according to Herbert Hoover, Secretary of Commerce, who bases his opinion on the annual review for 1923 by representatives of the Department of Commerce throughout the world. The important thing in formulating any judgement as to the economic future, states Mr. Hoover, is an understanding of our present position and of the forces that are in motion for and against economic progress.

In general the world situation is hopeful. The general spirit of prudence, the absence of speculation, complete employment, high production, and the great financial strength and stability of the important states in the Western Hemisphere, together with the promise of the early conference for systematic consideration of constructive solution of the world's greatest economic menace—Franco-German relations—all create a hopeful foundation on which the New Year may build.

In 1923 the United States have witnessed the highest total productivity and movement of commodities since the war, with full employment, high real wages, greatly increased savings, large additions to home building, and the largest increase in railway equipment since the war. The whole has been accompanied by a remarkable absence of speculation, consequent over-accumulation of consumable goods, or dangerous expansion of credit. As we are not in a boom we can expect freedom from a slump. Some secondary interrogations can be raised as to the effect of the expansion of installment buying of consumable goods, the acute suffering in the Northwest agricultural areas, the increase on stocks of some commodities, and decrease on some advance orders. These items are small compared to the whole industrial fabric. Taking the country as a whole we never in history have enjoyed a higher standard of living and comfort, nor so great a degree of commercial and industrial efficiency as today or so wide an understanding of the forces which control the ebb and flow of business. As severe as the situation is in the worst of the agricultural states yet the disparity between agricultural prices as a whole and industrial commodities is gradually lessening and the economic balance is tending to right itself.

Our manufactured production taken together will show about ten per cent higher than 1920 and fifteen per cent higher than 1922. The 1923 production of coal and coke shows a great increase, but the strike in 1922 prevents any useful comparison with last year. Production for this year increased over 1922 by about forty per cent in iron and steel, about fifty per cent in copper, about sixty per cent in automobiles, about fifteen per cent in rubber tires, about ten per cent in lumber, about twenty per cent in cement, about twenty per cent in sanitary ware and about ten per cent in leather. Textiles were about the same as the year before.

In the agricultural products cotton production increased about three per cent; the total bushels of cereals show an increase of about three per cent; pork products about twenty per cent, beef about five per cent—with a slight increase in dairy produce.

The stocks of goods generally at the end of this year are somewhat higher than at the beginning of the year and unfilled orders for steel are lower, as are orders for railway equipment. But the large employment bids fair for large continued consumption of goods.

TIRE GIVES MOST PER DOLLAR

On the basis of the 1913 dollar as a standard, it is now possible to buy 123 cents worth of tire and 101 cents worth of gasoline, according to a survey of the purchasing power of the 1923 dollar made by the National Automobile Chamber of Commerce. It is also possible to buy 111 cents worth of automobile to-day, the report states.

Automotive products cost less to-day than before the war, even though the purchasing power of the dollar has contracted considerably, the report declares.

Clothing figured on the same basis is higher, only 51.8 cents worth being procurable for the 1913 dollar, according to the survey.

Smoker For New Company

More than one hundred men attended a smoker held recently by the Barberton, O., Chamber of Commerce, in honor of the newly formed Akron Rubber Reclaiming plant which will be located in that city.

William Welch, vice presidnet of the new company, told the gathering that the machinery is being installed ahead of time and that according to present plans the factory will be in operation some time in March. All products will be made from reclaimed rubber and will include such articles as desk pads, ink wells and other hard rubber novelties and, possibly, paving blocks.

F. A. Seiberling, who is a director of the new concern, spoke of his hopes of the new industry, both as a paying proposition and as an outlet for the waste rubber of the Seiberling Rubber Co.

New Samson Units

Ground for new factory units to give 50,000 square feet of additional floor space has been broken for the Samson Tire and Rubber Corporation, Compton, Calif., according to an announcement recently by President Schleicher of the company. With new machinery the capacity of the company will be doubled.

Canton Tire Succeeds Gordon

Plans for the incorporation for the Canton Tire and Rubber Company, Canton, Ohio, successors to the defunct Gordon Tire and Rubber Company of that city have been practically completed, according to an announcement made by R. W. Kent, one of the incorporators.

The company will have a capitalization of $250,000 and will take over the Gordon plant for the manufacture of tires exclusively. The new company recently purchased the Gordon plant and equipment for $75,000. Most of the capital stock has been subscribed for by Canton interests, it is said.

Factory operations will commence in the near future at which time it is planned to employ about 60 people and turn out 300 tires a day.

Raymond W. Kent, former vice-president and factory manager of the Republic Rubber Corporation will be in charge of the factory, while the sales will be handled by A. R. McConnell, former secretary and treasurer of the Knight Tire and Rubber Company of Canton. Names of other officers of the firm have not yet been announced.

Tuscora Rubber Bankrupt

The Tuscora Rubber Company of New Philadelphia, Ohio, has been adjudged bankrupt by a federal referee, and Willis Bacon of Akron has been appointed trustee by the creditors. According to J. A. Elden, counsel for the trustee, general creditors' claims aggregate about $205,000, of which the largest is that of $86,000 brought by the Community Discount Mortgage Company of New Philadelphia. There is also a claim on a tire contract of $354,000 held by the Granville Tire Company of New York. It is said that about $3,500,000 of stock of the Tuscora Rubber Company was sold in Ohio. A receiver was appointed for Tuscora early this year and recently the company suspended manufacturing operations when stockholders failed to come to the aid of the company. It was making about 100 tires a day.

Middletown Stockholders Get Nothing

Charles E. Taylor, Trustee of the Middletown Rubber Company, Inc., of Middletown, N. Y., has filed his report in final accounting with Walter C. Anthony, referee in bankruptcy at Newburgh, N. Y. Of approximately $40,000 salvaged from the defunct concern, $9,550 is left to meet trustee and creditor claims, leaving nothing for stockholders, according to Mr. Taylor. The Westinghouse Electric Company holds the largest claim amounting to $9,000, and an arrangement is reported to have been made whereby that concern has accepted $1,000.

Following announcement of the bankruptcy the building was sold for $38,250, while the machinery brought $1,600 at auction. Most of this was used in paying off mortgages held against the company.

PROSPERITY RETURNS TO RUBBER INDUSTRY

Many Companies Able to Declare Good Dividends in 1923 Despite Adverse Conditions—Leaders See Bright Year Ahead

Definite indications of generally improved business conditions in the tire and rubber industry are to be found in the recent dividend actions of some of the leading companies and in their earning statements. These reveal a substantial increase in profits during the last half of 1923 during which time there was not only a decline in tire and rubber goods prices but in addition many manufacturers were obliged to curtail operations to a greater extent than usual for the season.

With current signs pointing to increased manufacturing operations and rising prices for rubber products many officials are optimistic over the outlook for the first quarter or half of 1924. They point out that tire production in the Akron district has increased within the past few weeks for 50,000 to 65,000 daily and that new men are being taken on by the big companies daily. One or two companies have announced increases in their tire price schedules to dealers and in the case of new contracts for 1924 with automobile manufacturers for original equipment prices in many instances represent an increase of 10 per cent over contract levels for 1923. It is expected that increases to the retail trade will be made generally in the near future.

Directors of the General Tire and Rubber Company at a meeting held last month declared an extra cash dividend of 6 per cent on common stock of the company, payable on December 20 to stockholders of record December 12. This was in addition to the regular quarterly dividend of 1½ per cent equal to 6 per cent per annum. It will be recalled that in 1922 as a result of record business General declared a stock dividend of 100 per cent at the end of the year this reducing the par value of the common shares to $50. The extra 6 per cent dividend recently declared is therefore equal to $3 a share. Officials of the company call attention to the fact that General has not passed a common dividend since its organization in 1916 and state that not a man has ever been laid off because of slack business.

Directors of the Kelly-Springfield tire company recently declared the regular quarterly dividend of 1½ per cent on the 6 per cent preferred stock, payable January 2 to stockholders of record December 17, 1923. Directors of the company state that the annual statement will show good earnings for the past year. Kelly's Arkon plant, which has been closed several months, was recently reopened following the announcement that the company has contracted for large original equipment orders with big motor car makers.

Another company to act favorably on dividends is the India Tire and Rubber Company of Akron which announced a dividend of 1 per cent upon its common stock and of 1¾ per cent on preferred, payable January 2 to stockholders of December 20.

Directors of the Firestone Tire and Rubber Company recently held a meeting at which it was voted to place the company's common stock on a basis of 4 per cent yearly. At the same time a quarterly dividend of $1 per share on the common payable January 21 to stockholders of January 10, was agreed upon. As expected, the company's report showed a substantial improvement.

Other companies who have not done so will hold their annual meetings shortly and officials generally believe that in all the big companies and most of the smaller ones will issue good reports in company with favorable dividend action.

BALLOON TIRES ROLL WHILE PARIS LAUGHS

The average balloon tired car is the subject of many a jest and jibe from the non-motoring populace along the highways in the Paris district, say advices from that city. The owners of these vehicles, however, are willing to put up with such pleasantries in view of the fact that with the new "comfort cords," as they are called, it is no longer a back-breaking, frame-wrecking ordeal to drive all day over the bad roads of the region. The French, it is said, also find that the balloon tires preserve the chassis and effect a notable economy in repair bills.

Republic Gets Ford Order

Republic Rubber Co., Youngstown, Ohio, has received a large order from Ford Motor Co. for mechanical rubber goods. E. H. Fitch, president of Republic, says its business is improving and he looks for much better average operations in 1924.

India Tire Has Good Year

At the last regular meeting of the Directors of The India Tire & Rubber Company, a dividend of one per cent Common Stock and one and three quarters per cent on Preferred Stock was declared to all stockholders of record as of December 11th, 1923.

"In many respects", said D. A. Grubb, Secretary and General Sales Manager, "our progress has been little short of phenomenal. The so-called 'seasonable slump' did not effect us. Neither were we hampered in the least by the periodical disturbances that took place. Right through the year, from January to December, our plant was operating at practically its fullest capacity. And, during the last five months, our volume of business in units was greatly in excess of that of any similar previous period.

"As a matter of fact, we have been constantly behind orders since the middle of last summer, notwithstanding that during all that time our daily production schedule was increased to a point away beyond anything that had ever before been necessary."

New Guayule Plant

The Continental Mexican Rubber Company is now completing a new unit for the production of guayule rubber at Estacion Catorce, S. L. P., Mexico, which is expected to start operation by February 1st, 1924. This will give that Company three well situated units and assures an ample and continuous supply of washed and dried guayule rubber from now on. It is sold in New York by the Continental Rubber Company of New York.

Rainbow To Begin Soon

Machinery is now being installed in the new plant of the Rainbow Tire and Rubber Company at Delaware, Ohio, and operations are expected to begin shortly. The company's present headquarters are at Columbus, Ohio.

Branch Managers Dunlop Tire & Rubber Co., Buffalo, N. Y. at recent plant conference

(Extreme Left) E. H. Kidder, General Sales Manager. In Group: W. A. Golden, Mgr., Buffalo Branch, F. H. Sawyer, Mgr., Philadelphia Branch; L. W. Kennedy, Mgr., Atlanta Branch; E. T. Richardson, Mgr., Boston Branch; T. W. Decker, Jr., Mgr., Cleveland Branch; R. L. Marshall, Mgr., Texas Branch; C. E. Neumann, Mgr., Wisconsin Branch; L. F. Desmond, Mgr., Chicago Branch; Chas. P. Stearns, Special Representative; Howard Armstrong, Truck Tire Representative; Warren Dow, Credit Dept., Mgr.; E. A. Stephens and R. E. Allen, Asst. to General Sales Manager.

D. F. CRANOR NOW WITH BINNEY & SMITH CO.

The beginning of the year 1924 marks a further forward step in the activities of Binney & Smith Co., 41 East 42nd St., New York City, manufacturers of Micronex.

The constantly increasing demand for this material and its eminent success in practically all kinds of rubber compounds has several times necessitated the establishment of enlarged manufacturing facilities during the past few years. It is now the aim of this company to enlarge in like measure the facilities of their research and development department in order that their customers may receive a still more complete service than they have enjoyed to date.

It will now be possible for customers of the Binney & Smith Co. to make practical use of the latest discoveries on the part of technical authorities on the proper adaptation of Micronex to various fields.

This enlarged research and development department will be under the leadership of Mr. Donald F. Cranor who needs no introduction to the rubber manufacturers of this country. Mr. Cranor comes to the Binney & Smith Co. from the Lee Tire and Rubber Co. where he has been associated since 1912 as chief chemist and assistant superintendent. During 1923 Mr. Cranor was technical superintendent of both the Lee Tire and Rubber Co., and of the Republic Rubber Corp.

Mr. Cranor's work has taken him through most phases of the rubber industry, and his contributions along technical and research lines have been widely recognized. He is a member of the American Chemical Society, having been on the Executive Committee of the Rubber Division, and is Chairman of the Crude Rubber Committee. He is a member of the American Society for Testing Materials, being a member of the Committee on Textiles (D13). He is also a member of the Society of Chemical Industry.

Through the work of this department it is felt that Micronex can be made still more valuable to the industry and the world at large. The research work will be conducted along strictly practical lines applicable to modern factory practice. It is the hope of the Binney & Smith Co. that their friends will make the fullest possible use of this service. Correspondence with Mr. Cranor is cordially invited, his address being in care of Binney & Smith Co., 41 East 42nd St., New York City.

Huber Moves Uptown

J. M. Huber, Inc., manufacturers of carbon black and dry colors, announce their removal on January 2 from 65 W. Houston St., to 130 West 42nd St., N. Y. City.

Goodyear Zeppelin School

It is reported that Goodyear Tire and Rubber Company may establish an assembly plant and Zeppelin school branch at the flying field at Stow, Ohio.

COTTON AGAIN LEADS EXPORTS

Unmanufactured cotton, as usual, occupied first place in value of United States exports at the end of the third quarter of 1923, heavy shipments being made in September to England, Germany, France, Italy and Japan. During the month of September alone exports of raw cotton in both value and quantity amounted to almost one-fourth of the entire exports of that staple during the first nine months of this year and were nearly double the quantity shipped abroad in September, 1922.

Mason Is Optimistic

"I am confident that 1924 will be the largest tire year in history in the number of units sold and in dollar value," was the optimistic opinion recently expressed by D. M. Mason, vice-president of the Mason Tire and Rubber Company.

"Akron and territory should be more prosperous than ever before, to a greater extent than ever before and the factories will supply nearer 100 per cent consumers' demands," said Mr. Mason. "After four years of agitation business is rapidly reverting to a quality basis again. Merits and quality of the products will again count and there will be fewer 'gyp' tires sold." He pointed out that in 1923 a great portion of the trade was in excess stocks of both dealers and manufacturers, carried over from 1922. He said that he felt that Akron tire manufacturers are either underestimating the probability of unprecedented prosperity in the tire business or else were prone to say nothing.

Bedford Rubber Formed

The Bedford Tire and Rubber Company, which will be located at Bedford, Va., has been chartered with a maximum capital of $1,000,000. L. R. Gills is president of the new concern, W. R. Dooley first vice-president, John W. Wright, second vice-president and J. J. Scott, secretary and treasurer. These men with Edward Farmer, F. B. Petty, L. E. St. Clair and Elbert Wright compose the board. The company will employ about 300 men at the start, and plans to use 600 at capacity.

Republic Representatives Meet

About 50 representatives from the New York, Chicago, Atlanta, Cincinnati, Philadelphia, Kansas City and Minneapolis district offices of the Republic Rubber Co. recently held a general meeting at headquarters in Youngstown, Ohio. This was the first general meeting of representatives since Republic was consolidated with Lee.

The convention was opened by president E. H. Fitch following a tour of inspection through the plant. Sales and advertising policies for 1924 was discussed and a complete program mapped out.

Miller Strikers Return

Employes of calender room of Miller Rubber Company plant in Akron who recently walked out over a wage dispute have now returned, according to officials of the company. Representatives of the strikers claimed that 300 men quit their benches, but Miller executives stated that the number was between 50 and 60. These officers attributed the strike to a slowup in the tire departments which are operating at about half of normal.

An official announcement stated that improvements are coming slowly in the labor situation, but there is a trend toward complete settlement of the difficulty.

It is said to be the first time in several years that wage troubles have arisen in the calender rooms of the company.

Late reports from Akron state that due to the strike about 1,000 Miller employes are working only on part time. It is reported that the company has broken off negotiations with the strikers and is endeavoring to build up a new force for the calender room.

Tire Dealers to Get Facts

In pursuance of a resolution adopted at the fourth annual convention held recently in New York City The National Tire Dealers' Association will be asked to furnish national headquarters with data concerning their inventories of tires and tubes as of Jan. 1. These figures will be received up to Jan. 10. Facts deduced from these figures will be told to dealers in a letter which will be issued on Jan. 15. At the same time the Association will send out a questionnaire asking for the percentage of increase or decrease in sales, purchases and inventories.

National Tire Has Good Year

An increase in sales, profits and output of tires and tubes with but very little additional factory equipment expense is shown by the report for the fiscal year of the National Tire and Rubber Company, East Palestine, Ohio, which was read by the treasurer C. W. Helman at the recent annual meeting of stockholders.

The company's plants have been operating on a 24-hour a day schedule continuously throughout the past year, it is said, and prospects for 1924 require operations of the same degree to take care of the demand for the company's products. Due to steady expansion during the last year it has been necessary to increase the payroll by $106,000, bringing the total annual payroll to about $300,000.

Officers and directors were re-elected by a unanimous vote of the stockholders.

May Sell Dural Plant

It is understood that negotiations for the sale of the Dural Rubber Corporation plant at Flemington, N. J., are under way. William H. Ebrenfeld who for several months has been managing it for the receiver, F. M. P. Pearse, is mentioned as the possible buyer. The plant is equipped to manufacture rubber specialties and tubes.

FIRESTONE PREDICTS STEADY IMPROVEMENT

Steady and sure improvement in the rubber industry in 1924 is the prediction made by Harvey S. Firestone, head of the Firestone Tire and Rubber Company in an address to stockholders and employes of the company at a recent meeting in Akron. "There is every reason to believe the rubber industry, and particularly the company, has passed through its most difficult period," said Mr. Firestone, "Manufacturing generally has made a record in economy and efficiency the last few years and I believe that the farmers upon whom so much depends for our prosperity are on a sounder basis, will produce more economically and will be a great deal more prosperous."

Speaking of restriction of rubber exports from the British East Indies, Mr. Firestone asserted that the American consumers have enjoyed a saving of about $75,000,000 during the past year as a result of his campaign against restriction, which, he stated, had aroused popular protest and caused Congress to appropriate $500,000 for investigation of new sources of rubber supply. This, he claimed, caused a decline in the price of rubber and precluded the possibility of a further advance. Mr. Firestone said he intended to continue his campaign for American rubber production and stated that his organization for investigation of possible sources had investigated the Philippines and was now busy in Mexico, South America and Africa. "I feel sure," he said, "we will find sources of supply that will keep America free of restriction and high-priced rubber."

Fisk Rubber Shows Gain

The Fisk Rubber Company's fiscal year was changed to Oct. 31 and the balance sheet and income account for the ten months ending on that date show net sales of $44,862,743, with operating profits after depreciation, but before interest charges, of $3,810,881, and after interest and other charges of $2,583,613. After setting aside $500,000 for contingent liabilities prior to 1923 the sum of $2,083,613 is carried to surplus, which compares with a corresponding period in 1922 with net sales of $38,516,661, showing an increase of 16.5 per cent, and an increase in operating profits of $1,179,998 or 44.8 per cent.

The balance sheet shows current assets of $23,108,445, and current liabilities of $3,607,560, a ratio of current assets to current liabilities of 6.4 to 1. Inventories are priced at cost or market, whichever is lower, and the cash position materially improved, with cash on hand more than sufficient to liquidate all loans payable.

Mason Reopens Bedford Plant

The Bedford, Ohio, plant of the Mason Tire and Rubber Company has been reopened on a 24 hour-day basis with production at the rate of about 2,500 tires daily. About 400 old employes have been taken on and plans are made for expansion of operations as rapidly as consistent with requirements, according to an announcement made by D. M. Mason, general manager of the company.

Owing to lack of orders the plant suspended operations a few months ago, but an accumulation of domestic and foreign orders has made reopening necessary. The Kent plants of the company are operating at full capacity, it is said.

It is expected that the Bedford factory will be going full blast within another month. Mr. Mason states that dealers and manufacturers stocks throughout the country are unusually low, that dealers' orders are increasing and that the first quarter of the new year should see very healthy conditions in the tire manufacturing industry.

P. D. Graham is in charge of the Bedford plant and a special plant manager will be appointed as soon as production methods become stabilized.

Howe Opens Dayton Branch

The Howe Tire and Rubber Company of New Brunswick, N. J., announces the opening of a branch office and sales room in Dayton, Ohio. This is in line with the company's policy of direct marketing for the elimination of "middleman's profits," it is said.

Goodrich Branch Not Closed

Owing to erroneous advices from the West THE RUBBER AGE in its issue of Dec. 25 carried a report that the Wichita, Kans., Branch of the B. F. Goodrich Rubber Company had been closed and its manager C. B. Weimer, recalled to the factory.

Instead, it is now stated that the branch will continue in operation on a more extensive scale than previously, the territory having been extended as far northeast as Emporia, Kans.

E. H. Eager, former manager of the branch, has been transferred to the factory and it is believed he will be placed in charge of a factory branch on the Pacific Coast. C. J. Boteler is in charge of sales at the Wichita branch.

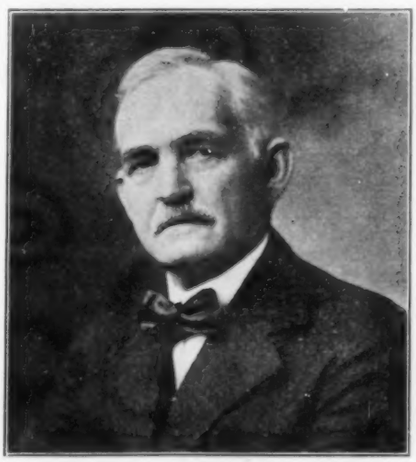
Stokes Heads N. J. Association

Charles E. Stokes of the Home Rubber Company, Trenton, N. J. has been re-elected president of the Rubber Manufacturers' Association of New Jersey. Frank Voorhees of the Voorhees Rubber Manufacturing Company, Jersey City, was elected vice-president, Clarence D. Wilson, Luzerne Rubber Company, secretary and A. Boyd Cornell of the Hamilton Rubber Company was chosen treasurer.

Francis E. Myers

Francis E. Myers, nationally known financier and for many years a director of the Faultless Rubber Company of Ashland, Ohio, died at his home in Ashland on December 2, 1923. He was seventy-four years of age.

Mr. Meyers' business career was a record of long and faithful service, keen industry and high character. It was typically American in that it began at the bottom and ended at the top of the ladder. He possessed a vast capacity for organization and concentration and during his life founded and built the largest pump concern in the world, the F. E. Meyers and Brother Company. But his shrewd business ability was tempered by the personal qualities of charity and modesty that endeared him to all his friends and associates.



Francis E. Myers

Mr. Myers was born in Perry Township, Ohio, near Ashland, on March 16, 1849 and was the oldest of nine children. He first began his business career at the age of 22 as a dry goods clerk at $100 a year and board. He later became a salesman of farm machinery and from that turned to the manufacture of agricultural implements and pumps, remaining in that business until the time of his death.

Mr. Myers was widely known as a financier in the Middle West where he was a director of the Union Trust and Guarantee Title and Trust companies of Cleveland, the First National Bank of Ashland, the Nickel Plate Rialroad; Cleveland, Southwestern and Columbus Railway; Aurora, Elgin and Chicago Railroad Company and the Faultless Rubber Company.

He was prominently identified with many clubs, societies and charitable organizations and an active figure in several business associations. He was also a large doner to educational institutions.

Mr. Myers is survived by three brothers and three sisters, three children and eight grandchildren.

Funeral services were held on Wednesday, December 5, and interment was made in the family plot at Ashland Cemetery.

Many floral tributes and expressions of sympathy from all parts of the country were received by Mr. Myers' family. Among these were messages from Mrs. Florence Kling Harding, James A. Campbell, president of the Youngstown Sheet & Tube Company, J. J. Bernet, president of the Nickle Plate Railroad, O. P. and M. J. Van Sweringen, of the Baltimore & Ohio Railroad, Senator Pomerene and the National City Bank of New York.

CENSUS BUREAU AT WORK ON RUBBER MANUFACTURES

The Bureau of the Census is now engaged in collecting statistics of manufactures covering the calendar year 1923. These statistics are compiled in accordance with the Act of Congress of March 3, 1919, and the schedules have been prepared after conference with the associations and others interested in the various industries. The schedules were mailed to the manufacturers on January 2 and the Director of the Census is very anxious to publish the statistics at the earliest possible date in order that they may be of the greatest possible commercial value. The manufacturers engaged in our industry are urgently requested to forward their reports to the bureau at the earliest possible date, preferably before the end of January. The bureau has agreed to tabulate the results for our industry as rapidly as the schedules are received and publish the totals within a few days after the receipt of the last report.

The Bureau has been cooperating very closely with the rubber industry and desires to be of service to it. The industry is urged to comply with the request of the director to mail reports promptly. If the reports are not made by mail it will be necessary for the Government to go to the expense of sending a special agent to the various establishments.

October Truck Exports Double September's

Exports of trucks from the United States in October were almost double the exports for September, according to Department of Commerce figures, contrasting strikingly with the figures for passenger cars, which showed only slight increase in value and a fractional decrease in number. The total value of all automotive products exported in October was $15,825,569.

The month of October did not change materially the ratio of exports to production. The combined output of cars and trucks in the United States and Canada, together with the production of American manufacturers in foreign assembling plants was $373,997. The total exports of cars and trucks were 27,922, or 7.5 per cent of the total production. For the first nine months of this year, the ratio of exports to production is 8 per cent.

EXPORTS OF RUBBER GOODS HOLD UP IN NOVEMBER

November exports of rubber manufacturers, valued at $2,568,649, maintained approximately the October and September levels, according to an analysis released by the Rubber Division of the Department of Commerce. Shipments for the first eleven months of 1923, valued at $34,732,498, showed a considerable advance over the corresponding period of last year when foreign sales totaled $31,303,000. It is to be expected that the value of exports for the entire year 1923 will exceed $37,000,000.

Exports of automobile casings numbered 1,301,544 during the first eleven months of 1923, compared with 1,215,457 in the 1922 period, but the value this year is only $14,573,705, compared with $15,413,070 last year. Solid tire exports continue on the upgrade. Taken as a whole the export tire trade this year will be approximately equal in value to the trade in 1922, while it will be considerably increased in volume.

In every department of the rubber footwear trade, exports this year are heavier than last. Exports of mechanical rubber goods are also on the increase this year. In the eleven-month periods, 4,145,209 pounds of reclaimed rubber were exported this year, compared with 2,033,435 pounds in 1922, and 12,892,215 pounds of scrap and old rubber, compared with 7,370,288 pounds in 1922. The trade in druggists' rubber sundries is somewhat less in value than last year, although the volume has increased.

SEVERAL NEW ENGLAND RUBBER PLANTS CURTAIL

Several thousand rubber factory workers in the New England district were idle during the last two weeks in December and the first week in January owing to the closing of several mills for various reasons, chief of which were general inventory taking, repairs and slow business conditions ascribed to the late season.

The National India Rubber Company, of Briston, R. I., a subsidiary of the United States Rubber Company closed its shoe and wire divisions from December 15 to January 2, throwing about 3,400 workers out of employment during that period. The reason was inventory and repairs.

The Alice Mill of the Woonsocket Rubber Company, Woonsocket, R. I., and the Millville, Mass., mill were closed from December 22 to January 2, and reopened on a four-day week schedule. The reason for the curtailment according to notices was "non-consuming weather." Both plants are units of the footwear division of the United States Rubber Company. About 3,500 were affected.

Weather conditions were also responsible for the closing for a ten-day period of the G.M.R. Shoe and the G.I.R. Glove Company's plants at Naugatuck, Conn. These factories were closed from December 22 to January 2, reopening on the latter date for two days, and on January 7 the plants were put on a four day week schedule.

Another United States subsidiary to effect a temporary shut down was the Boston Rubber Shoe Company, which closed its Edgeworth factory in Malden, and its Fells factory in Melrose, Mass. until January 2. About 2,200 men were thrown out of work for about two weeks. Since re-opening the plants have been operating on a four-day week schedule. This was another case of unfavorable weather for the rubber footwear industry.

Summary of Rubber Exports for November, 1923

Compiled by the Department of Commerce

RUBBER BELTING, HOSE, PACKING, AND THREAD.

	Rubber Belting		Rubber Hose		Rubber Packing		Rubber Thread	
	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars
Total	299,831	177,613	360,193	133,665	175,647	79,502	101,619	104,394

PNEUMATIC CASINGS AND SOLID TIRES.

	Pneumatic Casings				Solid Tires			
	For automobiles		Other		Automobiles		Other	
	Number	Dollars	Number	Dollars	Number	Dollars	Pounds	Dollars
Total	68,453	819,927	2,200	9,924	11,197	272,763	102,373	27,546

RUBBER FOOTWEAR AND SOLES AND HEELS.

	Boots		Shoes		Canvas shoes with rubber soles		Rubber soles and heels	
	Pairs	Dollars	Pairs	Dollars	Pairs	Dollars	Pounds	Dollars
Total	37,690	97,533	105,940	89,358	126,704	107,175	128,177	48,439

HARD RUBBER GOODS AND DRUGGISTS' RUBBER SUNDRIES.

	Druggists' Rubber Sundries		Battery jars and Accessories		Other Electrical Supplies		Other hard rubber goods	
	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars	Pounds	Dollars
Total	67,997	68,578	28,815	7,563	8,519	3,647	35,178	42,464

PNEUMATIC TUBES, REPAIR MATERIAL, MANUFACTURES OF RUBBER NOT ELSEWHERE SPECIFIED

	Pneumatic Tubes				Tire Repair Material		Rubber Manufactures	
	Automobiles		Other					
	Number	Dollars	Number	Dollars	Pounds	Dollars	Pounds	Dollars
Total	51,368	112,206	4,189	4,309	58,318	29,360	440,570	258,537

COATED OR WATERPROOFED FABRICS.

	Oilcloth (not floors)		Coated or Artificial Leather		Waterproofed Autocloth		Waterproofed Clothing	
	Sq. yards	Dollars	Sq. yards	Dollars	Sq. yards	Dollars	Pounds	Dollars
Total	613,636	159,727	309,476	226,788	97,393	63,307	27,382	23,294

Balloon Tires and the Public Taste

Endurance, Economy and Comfort are Most Desired — Overcoming Disadvantages Not a Difficult Matter

By J. E. Hale[1]

Stating that the adjustment records of the tire companies afford ample proof that under-inflation is one of the most flagrant forms of tire abuse, the author cites this to show that the public demand is to ride on tires having low inflation-pressure on account of the comfort secured thereby. Statistics obtained in 1922 show that endurance, economy of operation and comfort head the list of car attributes that the public desires most. It is claimed that these qualities are securable by using low-pressure air in tires of sufficiently large cross-section and special design.

An analysis of the opposition to balloon tires, the effect of balloon tires on acceleration and pick-up, an argument to show that the balloon tire is a distinct type, details of balloon-tire application to cars and rebound-checks as adjuncts to the use of balloon tires comprise the main divisions of the paper. Six specific conclusions are presented.—THE EDITOR

IN the paper entitled Shoeing a Car with Low-Pressure Air, which I presented at the Semi-Annual Meeting of the Society, at Spring Lake, N. J., in June, 1923, the treatment of this subject was from a tire-maker's point of view. I reported my observations on what the tires would do for the car and how they would affect the operation of the car, made some predictions on their durability and cost and concluded by proposing a line-up of sizes with a recommendation for amounts of air pressure. This summarized the very extensive development work in which we had been engaged and was really a first presentation of the subject to the industry. Since then the matter has been given such wide publicity that not only the car-builders but a considerable proportion of the public have become acquainted with the possibility of riding on low-pressure air. All the car-builders have had sample sets of balloon tires for exeprimental purposes. Also, many private owners have had their cars changed-over and have been running on this new form of tire equipment for many months. It seems desirable at this time to review the reactions of these two groups and to see what conclusions can be drawn.

The primary motive underlying this movement was the belief that the motoring public would appreciate a type of tire that would permit it to use low-pressure air, in order that it might enjoy the greater personal comfort of much improved cushioning, the protection that soft tires give to the mechanism of the car and the improved traction that would result from greater tread contact. As a matter of fact, this demand for low-pressure tires has actually existed for a long time. The proof of this is that many people under-inflate their tires. The tire companies have ample evidence of this; their adjustment records show under-inflation to be of the most flagrant forms of tire abuse and, while undoubtedly many of the cases are due to negligence, it is well known that it is common practice for car-owners, who do not figure tire-mileage costs, to run deliberately at low inflation for the comfort and protection that they can secure.

Since disclosing the balloon tire and explaining that it is deliberately designed to use low-pressure air, the public has grasped the idea, and definite indications are noticed that it will take matters into its own hands and ride on low-pressure with its present equipment which, of course is something we cannot authorize with the heavy, thick-wall construction. The important point is that the public wants the personal comfort, the protection of the car and the like that low-pressure gives. Our problem is to produce the true low-pressure tire that we can stand back of.

Further evidence of the logic of this movement is given by the returns of the ballot taken by the National Automobile Chamber of Commerce in 1922, in which it sought "what the public wants" from 20,000 car-owners. In these returns, endurance, economy of operation and comfort head the list of the attributes the public desires most, and these are the things that we claim are had by the use of low-pressure air. The returns were reported as shown in Table 1.

TABLE 1—CAR ATTRIBUTES DESIRED MOST

	Per Cent
Endurance	15.0
Economy of Operation	14.0
Comfort	9.5
Price	9.5
Appearance	8.0
Service, Good Local Repair Shops	7.5
Hill-Climbing	7.0
Flexibility	6.5
Endorsements, Opinions of Other Owners	6.5
Specifications	6.0
Speed	5.5
Appointments	5.0
Total	100.0

One of the big problems that has always confronted the tire manufacturers is convincing the motoring public that it must inflate its tires properly to avoid premature failure due to under-inflation. The fight to maintain air pressures is so old, and has been carried on so persistently, that the motoring public has accepted proper inflation as one of the nuisances that are necessary to the use of the automobile and, in a general way, it understands some of the reasons. But few have raised the question as to designing tires that could be run at a much lower inflation-pressure. The solution of this problem was not evident to tire designers until the evolution in the tire industry had opened the way for the balloon tire. Now it seems so simple and logical that we naturally wonder why we did not think of it before. With the details worked out, the public grasped the idea

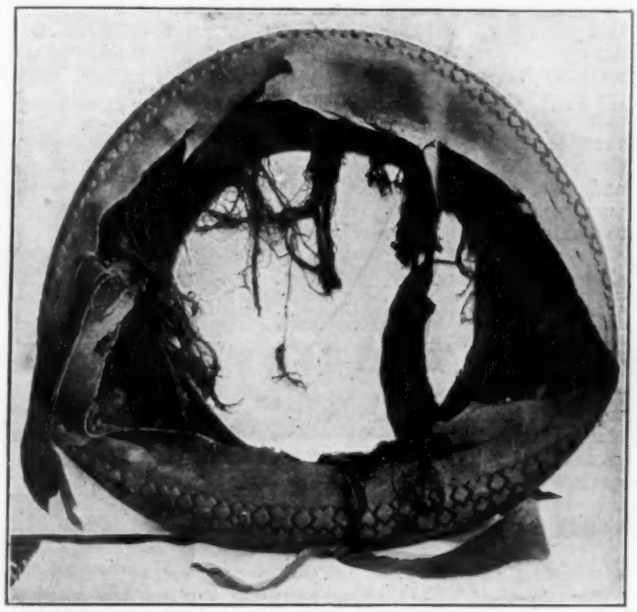


Fig. 1.—A Balloon Tire That Ran for 15 Miles at High Speed After Going Flat at a Speed of 75 M.P.H.

[1]M.S.A.E.—Manager of the development department, Firestone Tire & Rubber Co., Akron, Ohio.

[2]In the Journal of The Society of Automotive Engineers for December 1923.

instinctively and the reaction we get from indiviudals is indicated by the questions they ask, such as: "How does it affect the steering?" "Does it cut down the gasoline consumption?" "How much do they cost?" "What air pressure is used?" "Can I buy a set for my car?"

Realizing that a sizable portion of the public had discovered the attractive features of riding on low-pressure air, we felt well pleased with our efforts when we discovered the way to make riding on low pressure legitimate. The psychological reactions that we have encountered among the motor-car builders, however, have disclosed various points of view. Of course, the first reaction in most cases was that of curiosity, to learn as much as possible about the tires from personal observations on sample sets. Then, true to the responsibilities of their positions, each and every car-designer proceeded to search for objections to this new equipment; naturally, they found that the balloon tires, having some characteristics different from those of high-pressure pneumatics, could not be substituted without due consideration. They agree almost universally that the low-pressure tires give a better ride; in no case have I heard any contention that the tires do not do what we claim for them, yet the attitude toward them ranges all the way from actual adoption to direct opposition, with all kinds of intermediate opinions. So, the matter we are facing in satisfying the public on low air-pressures is to examine more closely into the apparent resistance toward the adoption of this type of tire. In a general way, it must be due to psychological, engineering or economic reasons.

Analysis of Balloon-Tire Opposition

So far as economic reasons are concerned, the monetary appropriations involved are not excessive, since they are confined to fender charges and details of brake and axle design to provide additional offset. As to engineering obstacles, I have not heard of anything insurmountable in this direction. Naturally, a new tire-equipment of this description could not be expected to fit the vehicles without some alterations or modifications; but I submit as proof that the objections cannot be serious the fact that of the dozens of cars which have been changed-over, the owners have found them to be entirely satisfactory. Of course, in some cases the fenders were not wide enough with the new equipment and as a result mud would be spattered in an objectionable manner; but this is simply something for the car engineers to overcome by redesigning the fenders.

In a few cases, car designers have encountered front-wheel shimmy with cars fitted with the balloon tires and for that reason have disapproved of this form of equipment. So far as I have been able to discover, this form of trouble almost never occurs at speeds below 60 mi./hr. A few cases of front-wheel shimmy have come to my attention on change-over jobs but in all cases the shop mechanics have been able to make some adjustments in the steering mechanism that eliminated it. On my own roadster car I can bring about front-wheel shimmy at any time by slacking-off a three-quarter turn on a certain nut in the steering linkage, thereby introducing a certain amount of play, but I can remove it simply by tightening this nut again.

The effort required for steering receives very prominent consideration, of course. A soft tire steers somewhat harder than a highly inflated tire, and this low-pressure project caused many people to make comparisons. Some steering-gear changes have already been made, and gears are available which give satisfactory results. We feel sure that this objection will disappear.

Effect on Acceleration

Another point that has come up in a few cases, and apparently has been registered as a primary objection, is that the acceleration in car performance is affected adversely by low-pressure tires. One can understand readily why the car-builder who has expended a large amount of time and effort in trying to excel in acceleration is reluctant to have any elements introduced in his equipment that will disturb the performance of the car, in this respect; but, so far as I have been able to determine, the low-pressure tires affect the engine performance only slightly. On a coasting test, as one senses the action of a car rolling downhill in ordinary driving, certainly no evidence of drag or sluggishness is present.

So far as fuel consumption is concerned, plenty of information is available to the effect that this is not affected adversely; in fact, evidence can be adduced that there is a slight increase in gasoline mileage when using the balloon tires. I have just completed a 1200-mile trip in my 4-year-old roadster that was equipped with balloon tires and pretty heavily loaded. I averaged 17 miles per gal. for the entire trip.

Predictions of serious accidents have been registered in case one of these thin-wall tires should blow-out on a tire. So far, no trouble has been experienced from this source; surely, if the allegation were true, something would have happened long before this because a large number of these tires have been in service long enough to give actual experience along this line. The experiences that have relieved most completely the minds of those who were apprehensive in this regard are those of Cannonball Baker. He had a front tire go flat while running a touring car, 55 mi./hr. He reported that he noticed no particular difference in the performance of the car with the 7.30-in. balloon tires, which he had on the car at the time, and similar occurrences that he had previously with the regular 33x5-in. high-pressure tires. In other words, there was nothing dangerous, the only reaction being a slight tendency for the car to draw to the flat-tire side. He had a tire go flat on a rear wheel while running 75 mi./hr. Inasmuch as he was attempting to make a record, he continued to run at high speed for 15 mi. on the flat tire. Fig. 1, shows the condition of this tire after it was sent in for our inspection. The punishment was so severe that the rubber was actually all gummy from being devulcanized. But the important thing is that he was able to drive the car with this dishrag-like appendage on the wheel. Incidentally, it is interesting to note the thoroughgoing way in which the company that built the touring car mentioned was able to investigate air-cushion tires by putting the car, so equipped, into the hands of a driver like Cannonball Baker. This course enabled the company to reach conclusions very quickly.

At the inception of this balloon-tire idea, we were rather of the opinion that we were devloping a luxury tire which probably would be limited to application on cars of the more expensive type; but, as our work expanded and we began to get reactions from car-builders, it became apparent that the low-pressure air would be universally desirable. As a matter of fact, low-pressure air in tires offers a greater improvement comparatively in comfort and in protection to the vehicle in the case of moderate and low-priced cars.

Balloon Tires a Distinct Type

It should be understood definitely that what we term balloon tires, while they resemble the high-pressure pneumatic tires, are sufficiently different in many of their details to constitute an entirely distinct type. The distinguishing features of a true balloon-tire are: a very thin carcass, narrow rim-fitting, air pressure recommendations for actual use ranging from 20 to 35 lb. per sq. in., a small-diameter rim to accommodate standing diameters no greater than those used at present and special tread designs adapted to low-pressure tires. My opinion is that the present line of tires and rims cannot be converted into the true balloon-type by oversizing and splitting the difference in the number of plies used. A satisfactory series of tire sizes for the new type has been under development for practically a year and in the following text I report certain general observations on the application of it to motor cars. This is a problem having two aspects; that is, the application of balloon tires as original equipment and their use as a changeover equipment for cars now in service. Our judgment is that four section-sizes of tire are necessary to equip the various cars properly with tires and at the same time to allow the pressure recommendations of from 20 to 35 lb. per sq. in. In a general way, the choice of tire sizes to be applied to the various cars is shown in Table 2. We have found that the cars can be grouped according to their wheelbases much more logically than in any other way, because cars of approximately the same wheelbase are likely to be of about the same weight. Some wheelbases are omitted from Table 2. These are border-

line cases for which the tire sizes must be chosen by careful consideration of the front and rear weights when the car is loaded.

TABLE 2—BALLOON-TIRE SIZES SUITABLE FOR THE VARIOUS CARS

Balloon Tires, Actual Section, In.	High-Pressure Pneumatic-Tire Equivalent, In.	Maximum Load per Wheel, Lb.	Wheelbase Range of Cars for Each Size of Tire, In.
4.40	3.5	750	100 to 103
5.25	4.0	1,000	108 to 115
6.20	4.5	1,300	118 to 126
7.30	5.0	1,700	130 to 140

Balloon-Tire Application

When the factory fits balloon tires to new vehicles or does change-over work on existing cars, only two problems arise; first, how much to offset the rear wheels to clear brake rigging so that the sidewall of the tire and the flange of the rim will clear; second, how to provide means for carrying the spare tire. Fig. 2 enables one to visualize the relative positions of the two types of equipment. In cases where the rear wheels do not have to be offset and the brake-drums are not too large in diameter, the wood wheels can be rebuilt using a steel-felloe wheel and a demountable rim that has been designed especially for these tires. These demountable rims are of the endless type and have a spring side-ring. Where wood wheels cannot be used because they cannot be offset sufficiently, either wire or disc wheels must be resorted to and for these cases the same type of rim has been worked out in such a manner as to be built into the disc or the wire wheel as the case may be.

We have found that fitting tires of the 4.40 and 5.25-in. size to cars in their respective classes, is a fairly straightforward proposition, the fender and the brake-drum clearances being naturally sufficient to accommodate the tire change without any complications. The builders of cars in these classes could adopt the balloon tire with little or no change in their chassis design, so far as these clearances are concerned.

In applying the 6.20 in. balloon tire as a substitute for the 4½ in. size on cars of 118 to 126 in. wheelbase, in most cases the rear wheels must be offset by amounts varying from ½ to ¾ of an inch so that the sidewall of the tire or the flange of the rim will clear the brake-lever arm properly. In practically all cases the fenders are wide enough to cover the tires properly against mud-throwing.

The 7.30 in. tires replace the 33x5 in. size and are practically identical in standing diameter; so, the fender clearance is satisfactory. However, the brake drum diameter of these large cars is sufficiently great that brake-mechanism interference calls for a greater offset of the tire for proper clearance, ¾ in. or more; so, the sidewall of the tire in some cases is rather near the outer fender-line and this, of course, would account for mud-slinging. Car builders naturally are reluctant to narrow the wheel housing because it cuts into the seat space; as a result the resistance on this point is rather difficult to handle unless there is a willingness to increase the gage of the rear wheels to make up the deficiency. Reports have been received that the turning radius of the steering wheels has been reduced slightly with this size in some cases.

Rebound Checks

In my former paper I mentioned the desirability of using shock-absorbers or spring-rebound checks, and predicted a disappointment with balloon tires without these instruments. I want to emphasize now even more strongly that some devices of this sort are necessary. The low-air-pressure tires will take care of the pavement irregularities splendidly but depressions in and bumps on the general road level, that naturally are beyond the capability of the tire to care for and that call on the spring action seem to produce excessive rebound. I have found it of very great advantage to keep the spring leaves well oiled. Discrimination must be used in choosing a type of rebound check. We have had cases where the applications are very unsatisfactory. The rebound seemed to be over-checked to such a degree that the riding was extremly choppy and, in spite of all adjustments, the condition could not be cured. On the other hand the rebound check gave very satisfactory results when applied to another car. This leads me to conclude there is a very complex situation in which the spring characteristics play an important part.

Balloon-Tire Usage

It is nearly a year now since balloon tires have been under experimental observation and the major development work is completed. Naturally, some details will require modification and different treatment, but we feel that the automobile industry should consider this form of tire equipment now in its hands. It is for that industry to decide what shall be done with it. We know of some short-comings in the balloon tires; for instance, they will suffer from under-

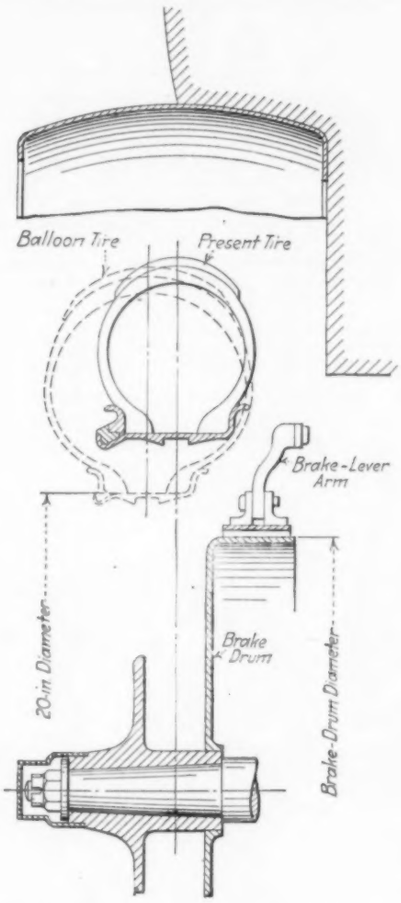


Fig. 2—Relative Positions of Balloon and Pneumatic Tires as Applied to an Ordinary Wheel

inflation the same as the high pressure tires do. Already, we have had a case in which an owner should have run with an air-pressure of 30 lb. per sq. in. but used a pressure of 20 lb. per sq. in. As a result the tires failed prematurely. We find that in many cases individuals think that it will be possible to use pressures much lower than those we really contemplate.

Front-wheel alignment must receive more attention on cars equipped with balloon tires. Premature tread-wear because of misalignment is common; the low pressure tires are much more sensitive in this form of abuse than are the high-pressure tires. Our whole experience leads to the following conclusions:

(1) Unquestionably, the public will rise on low-pressure air.
(2) The tire companies must meet the situation by designing and marketing tires that can be used with low-pressure air.
(3) The public demand for balloon tires unquestionably will be so great that a large number of existing cars will be changed over to use them.
(4) The public will pay more for balloon-tire equipment because it looks better, rides better, brakes better and saves the car.
(5) As soon as builders have learned what balloon tires will do for a car, they will be able to use lighter design and thereby save money.
(6) The January, 1924, automobile show will include many cars equipped with balloon tires.

Rubber As A Jointing Material For Gas Mains

Remarkable Result of 40 Years' Trial — Minimum Leakage and Explosion Danger — Effect of Deleterious Ingredients Slight

SUMMARY

(1) The most dangerous constituents of coal gas have little or no deleterious effect upon a fully vulcanized rubber of suitable composition, even where expansion is possible, and when these are brought into the freest contact, in the form of either liquid, vapor, or even vapor with an impact as in the impingement tests. In many of the rubber joints now in use, the rubber is not in free contact with the stream of gas at all.

(2) When the rubber is rigidly held, as it always is, in a gas joint, even the slightest action does not penetrate beneath the outer skin of the rubber.

(3) After nearly fifty years' service in the subsoil of a large town the rubber rings retain very considerable elasticity and show no effect of gas that can be detected by the unaided eye.

(4) Therefore, there is no reason on the grounds of either utility or durability why rubber should not be used in the jointing of gas mains.

ONE of the constant difficulties that a gas company has to contend with is the leakage of gas in the distribution mains and pipes. Each and every gas company always has to take the lost gas into consideration as the difference between what it sends into the holder and what is metered out in the customers' premises. While a certain amount of leakage is normally expected, nevertheless the "un-accounted for gas," as it is called, may sometimes be very high and at all times the gas company is anxious to reduce this loss as much as possible, for the best that can be said of it is that it is totally unnecessary.

The use of rubber in the form of gaskets for this purpose and the durability of the same in the gas lines, subjected to all sorts of adverse conditions and severe requirements, are explained in detail in an article which recently appeared in the *Gas Journal*, an English publication. The investigation is noteworthy for its thoroughness and naturally enough for its conclusion that rubber may be used for this purpose with success and with a considerable degree of improvement over the ordinary jointing material commonly used for this purpose.

It is interesting to note that the idea of using rubber was suggested to the writer at a time when he had to deal with a very serious leakage situation. Large quantities of gas were disappearing from the mains, entailing a considerable loss to the company not only because of the money value of the gas but because of the constant repairs and changes that had to be made to the distribution lines, not to mention the danger of explosion of the lost gas with consequent injury to persons and property. When rubber was first suggested for this purpose and the matter was put up to a rubber company, the answer was forthcoming that the gas work liquor would destroy the rubber within a week's time. Gas men, when consulted, said that it was impossible to use rubber with any success, and it was strange, as the writer expresses it, that everybody whose advice was asked spoke not from personal experience but from mere dogmatic opinion on the subject. There was not even any second hand experience with the matter. Persistent inquiry revealed the fact that a large gas company had used rubber rings and had a pipe line which had been down for several years and had given satisfaction during that time.

Figure 1 shows a rubber ring which has been underground for some time in this line and which was removed during the making of some alterations to the line. The rubber was found to have retained its resilience, but it had become set in a more or less oval section. The ring of rubber, though over sixty years old, appeared to be almost as good as new.

Practical Test Made

A real practical test was made in a stretch of 150 yards of a gas line in the worst part of an area which suffered badly from gas leaks. The pipes were taken up and rubber joints were substituted. The immediate results were eminently and permanently beneficial. A couple of years later another section of pipe was taken up and treated in the same manner. These rubber joints were made approximately eighteen to twenty years ago. The writer, Walter Hole, states that within that time there was never a single case of gas leakage, drawn joint, or fractured main and no expense whatever for repairs. The type of ring used is shown in figure 2 and is said to be made of "A" or gray rubber composition, containing a high percentage of rubber.

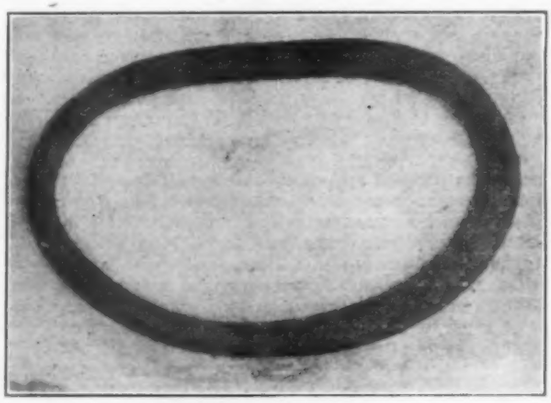


Fig. 1.—Rubber Ring after Use in Ground for approximately Forty Years

Solvent Action of Gases on Rubber

Tests were carried out to determine what is the solvent action if any of the various constituents of coal gas and water gas that are carried through gas distribution mains. It is obvious that this action will depend on five factors:

(1.) The character of the rubber composition used in making the rings.

*Abstract of article in The Gas Journal, England, for Nov. 21, 1923.

(2.) The degree of vulcanization to which the rubber has been put.

(3.) The precise action to which it is exposed, that is, the properties of the materials with which it comes in contact.

(4.) The extent to which the rubber is prevented from expanding, which is dependent on the type of joint used.

(5.) The general conditions under which it is used.

In making these tests three samples of rubber were taken. The first was pure Para and the two others were rubber

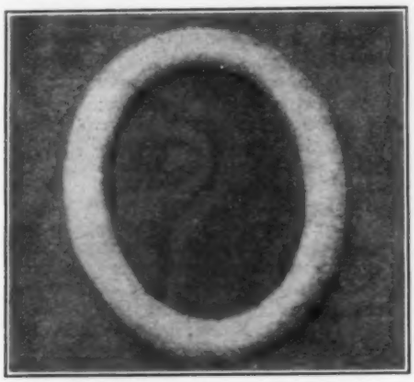


Fig. 2—Rubber Ring used by Writer.

compositions usually sold for making gaskets, etc. The rubber was obtained in the following states:

Quarter vulcanized; half vulcanized; three-quarters vulcanized; fully vulcanized.

The tests which were made consisted of vapor tests, immersion tests and impingement tests. The reagents which were used in making these tests were as follows:

Petroluem, specific gravity 0.81 Boiling point between 130 and 300 degrees C.
Pure benzol, specific gravity 0.885 boiling point 80.3 degrees C
Toluol, specific gravity 0.870 boiling point 110.8 degrees C
Solvent naptha, specific gravity 0.875 boiling point between 140 and 160 degrees C.

With the exception of those tests which were made under compression, the rubber samples were cut up into standard strips 2.5 inches long by half an inch wide by 0.25 inch thick. These strips were first weighed and suspended in an Erhlenmeyer flask. This was the apparatus used to determine the effect of vapors and immersion on the rubber. The rubber samples were permitted to remain in the flasks for an extended period of time and at intervals of a few days they were removed from the flasks, dried for one hour and then reweighed to determine the change in weight. The action of the solvent on the immersed end of the rubber strips was also noted and after the weighings had shown that the samples were down to constant weight, the test was completed.

The final weights showed that the rubber had increased in weight. The samples had also increased in size. The end of the strip which had been immersed was found to be soft and spongy, the rubber having become soft and jellylike. The semi-vulcanized and fully vulcanized strips did not lose their clean-cut edges, as can be seen from figure 3. They simply expanded.

Solvent Immersion and Vapor Immersion

The difference between immersion in the liquid solvent and in the vapors of the same is clearly seen from this figure, for the effect of the former is considerably greater as far as the swelling of the rubber is concerned. This is due to the fact that the liquid, coming in direct contact with the rubber sample, is drawn up into the rubber by capillary action. The upper end of the immersed rubber sample, is however not so swollen as the lower end. One question that arose at this point was whether this action was chemical or physical in character. To determine what actually did take place, the weighed strips were dried for three days which was followed by drying in a steam oven for four hours.

When the strips of rubber were weighed after this treatment they were found to show a remarkable difference in weight. The strips that had been subjected to the vapors of the solvent returned to their original weight and the immersed strips also gradually returned to normal.

Effects of Solvents

The effects of the four different solvents used in these tests are given in diagrammatic form in the original article. It was proven that petroleum had the least effect on the rubber, while toluol had the greatest effect. After the treated rubber samples had been dried in the manner described above, the strips returned to their original weight in accordance with the following percentages:

Petroleum treated strip—to within three per cent of original weight.

Benzol treated strip—to within five per cent of the original weight.

Toluol treated strip—to within five per cent of the original weight.

Naphtha treated strip—to within eight per cent of the original weight.

In comparing the effects of the solvents on rubber compositions in different stages of vulcanization, it was found, strangely enough, that the fully vulcanized sample of rubber proved to be more absorbent than the semi-vulcanized rubber. Then again after the fully vulcanized strip had been dried, it was found not to return so closely to its original weight as the partially vulcanized rubber.

Expansion of Samples

The effect of the different solvents on the expansion of the rubber samples is shown in the following tabulation.

Size of standard strip 2.25 x 0.5 x 0.25 inch.

Vapor bath	Benzol	Toluol	Solvent naptha	Petroleum
Semi-vulcanized	3x0.55x0.25	3.25x0.625x0.312	3.125x0.312x0.625	2.625x0.625x0.25
Fully vulcanized	3x0.6 x0.25	3.25x0.625x0.312	3.18x0.625x0.312	2.312x0.625x0.25
Liquid bath				
Semi-vulcanized	3.75 x0.75 x0.5	3.75x0.75 x0.5	4x0.81x0.438	Rubber strip increases in size at point of contact
Fully vulcanized	3.625x0.875x0.625	3.75x0.438x0.75	4x0.9 x0.438	

These results clearly indicated what should be expected in the compression tests which were made to determine what would happen to the rubber when compressed and then subjected to the action of the solvents, a condition which exists

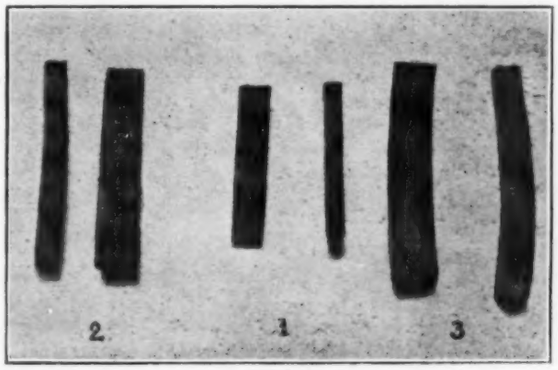


Fig. 3.—Expanded Strips.
(1) *Front and side view of the standard strip.*
(2) *Similar strip after vapor immersion.*
(3) *Similar strip after solvent immersion.*

in the gas mains where rubber gaskets are used to make tight joints between the lengths of pipe. The samples for the compression tests were prepared by squeezing the rubber between two iron plates which were drawn tight by means of a bolt which extended through a hole in either plate and a hole pierced through the rubber. By screwing tight a nut a considerable pressure was exerted on the rubber. It is obvious that a part of the rubber would be squeezed out to extend beyond the edges of the iron plates by such treatment, and that this portion of the rubber would not be subjected to the same degree of compression as the rest of the sample.

The samples were then immersed in a solvent for fifty days. The rubber became distended at the flat edges, but this most significant fact was observed, namely, that the action of the solvent only penetrated just past the edge of the iron plates.

Impingement Tests

These tests were carried out with the idea of duplicating the conditions that exist in the gas main as closely as possible.

There the constituents of the gas are impinged upon the rubber gasket. The apparatus used in making these tests is shown in figure 4. The block of rubber is held in position by a pair of clamps and a fine stream of air which has first passed through a container full of the solvent is caused to impinge against the rubber. The tests were carried out with benzol, toluol and solvent naphtha. Petroleum is not volatile enough at atmospheric temperatures to give a reasonable air saturation and hence no test was made with it. However it has already been shown that petroleum has the least effect of any of the solvents on the rubber and hence there is nothing lost by not conducting this test with petroleum. The higher boiling point solvents, toluol and solvent naphtha, caused considerable difficulty in the experiment and yielded the lowest results. After a test of over five hundred hours, it was found that no detrimental action could be detected in samples of semi-vulcanized and fully vulcanized rubber.

Results Obtained with Benzene

However, in the benzene tests it was observed that there was a slight action produced on the rubber sample. A blister was formed at the point of contact of the stream of air and the rubber and furthermore this blister was more accentuated in the case of the semi-vulcanized samples than in the case of the fully vulcanized samples. It must be remembered that air fully saturated with benzol vapor represents approximately five times the amount of benzol vapor that is usually found in coal gas. Five hundred cubic feet of benzolated air was therefore equal to 2500 cubic feet of gas. Then again this point must be considered, namely that the stream of air was concentrated at a very small point on the rubber sample and the conditions were accordingly as severe as they could be. The good results obtained in this test indicate that the action of the benzol vapors in the gas on the rubber gaskets used in the gas mains is not great, with the conclusion that the coal gas as a whole cannot be very destructive on the rubber gaskets inasmuch as its most active ingredient, as far as rubber is concerned, benzol, does not act that way.

Action of Naphthalene

Another important point is the action of naphthalene vapors on rubber. A test was made to determine this action by subjecting samples of pure rubber and rubber compositions, both in the fully vulcanized and semi-vulcanized states to the action of air which was saturated with naphthalene vapors at atmospheric temperature for a period of eighty days. This corresponds to 11 grains of naphthalene per thousand cubic feet of air at 60 degrees F. The results of this test are given in the following tabulation.

Pure rubber	An increase of 10.7 per cent in weight.
Semi vulcanized rubber composition	An increase of 8.1 per cent in weight.
Fully vulcanized rubber composition	An increase of 7 per cent in weight.

Examination of the pure rubber strips after this treatment showed the surface of the same to have become hardened, but after the top film had been broken by pulling the rubber, the rest of the sample did not seem to have lost any of its elasticity. On the other hand the semi-vulcanized rubber composition was materially affected by this treatment, as the strips had badly deteriorated and broke down with an irregular cleavage. In this case it appeared that the rubber composition had to be vulcanized completely in order successfully to withstand the action of the naphthalene vapors. There did not seem to be any change except for a certain gain in weight.

Experience with Rubber Gaskets in France

The gas mains of the city of Lyons, France, have been jointed with rubber gaskets for quite a long time. Mains originally laid down in 1878 are said to be satisfactory even at the present time and all the joints are made with rubber gaskets. Good results have been obtained not only in the low pressure mains but in the high pressure mains as well. Various inquiries in the different European countries, particularly France and Germany, have revealed the fact that the satisfaction experienced with rubber gaskets on gas mains has not been limited to any one locality, but confirmation of their practicality for this purpose is obtained from various sources. Thus, for example, the city of Nice has used rubber gaskets on its gas mains, even to the diameter of twenty inches, ever since 1870 and the mains are still in use. A rubber ring which has been in use since 1877 was examined and found to be perfectly resilient. The only broken or frayed parts in the ring were at those points where the rubber had been compressed between the pipe and the clip. The rubber appeared to be in as good condition as when it was first used.

Test on Old Rubber Ring

The original paper gave a description of an old rubber packing ring which had been used for the past 46 years in the town of Torquay, France. A detailed examination was made. It was found that the rubber possessed considerable elasticity and a superficial examination of a cross-section with the eye disclosed no signs of change. The resilience test was made by stretching the rubber under a load. It was stretched 33.3

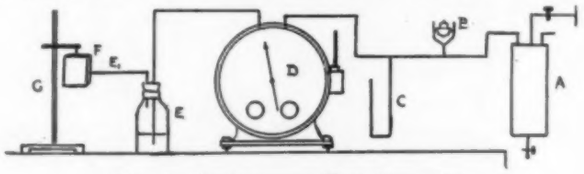


Fig. 4.—Impingement Test Apparatus.
A. Water Pump. B. Safety Valve arranged to blow at 3 in. pressure, to take up variations of water pump. C. Pressure Gage. D. Meter. E. E1. Bubbling Bottle containing Solvent and Jet. F. Rubber Block. G. Support for Rubber.

per cent of its length and it was left in that condition for nineteen hours. It was then released and was found to have returned to within one per cent of its original length at once and after ten minutes all signs of its long stretch were completely removed. Then a portion was stretched 66.6 per cent of its length and left for a few minutes. After the load was removed it returned to its original length within a period of five minutes.

Under the microscope the old rubber appeared cloudy while a sample of new rubber showed an apparently uniform structure with occasional opaque particles.

Chemical Examination

Chemical examination of the old rubber joint was made and the following results were secured:

Loss on heating at 100 degrees C in coal gas	2.7 per cent
Weight of the acetone extract	7.8 per cent
Ash	20.0 per cent
Sulphur	
Combined 3.5 per cent	
Free 0.6 per cent	4.1 per cent

The ash was found to contain essentially oxide of zinc. The loss of weight in extraction of the rubber with acetone was approximately two per cent more than the total loss on heating and weight of acetone extract.

The writer goes into further detail regarding the German experience with rubber gaskets in joints on gas mains. The same good results appeared to have been obtained in Germany with rubber gaskets. As one expert expressed it, the durability of the rubber rings is indefinite.

In considering this matter two things must be borne in mind. The first is that rubber is practically incompressible. On the other hand rubber cannot take up moisture or gases without expanding. But when a rubber gasket is used in making a joint between lengths of pipe in a gas main, the rubber is so tightly held by the pipe that expansion of the rubber is impossible. This makes it impossible for the rubber to absorb water or gases, for to do so it must expand. Hence the rubber is not subjected to the deleterious effects, if they really are so, of the absorption of gases and moisture. Even if absorption does take place, the action is purely physical and not chemical and it is doubtful if it is injurious to the rubber in any way. The fact that such absorption does not take place in the rubber gasket compressed between the ends of the pipe lengths makes any action of the gases and moisture in the coal gas absolutely nil, which explains the exceedingly long life of the rubber rings that have been used for this purpose in the past.

Where there is danger of gritty substances grinding their way through the rubber and into the joint, it is advisable to cover the rubber gasket with a piece of yarn, which is forced into the joint, or it may be stopped up with soft clay, which is just as effective.

RUBBER STATISTICS

Import **Production** **Export**

Importations of Crude Rubber into the United States During November, 1923

Figures compiled and distributed by The Rubber Association of America, Inc.

(Estimated net weights—long tons)

PLANTATIONS

FROM	TONS
Batavia	616
Belawan-Deli	1,445
Colombo	1,579
Hamburg	8
Liverpool	32
London	280
Malacca	1,107
Naples	5
Penang	1,139
Pt. Swettenham	947
Rotterdam	425
Singapore	4,656
Sourabaya	141
	12,380

MANICOBA & MATTO GROSSO

Manicoba	4

AFRICANS

FROM	TONS
Antwerp	7
Hamburg	99
Liverpool	32
London	1
Rotterdam	7
	146

CENTRALS AND GUAYULE

Centrals (Mexico and Central America)	85
Guayule (Mexico)	52
	137

PARAS

Iquitos	7
Manoas	252
Montevideo	9
Para	457
	725

Gums, Waste Rubber, etc., Imported from Various Sources

Waste	53		
Balata	48	Miscellaneous Gums	302

Comparison 1922—1923

	NOV.-1922	NOV.-1923	Total Importations 11 months ending, NOV. 30. 1922	1923
Plantations	21,788	12,380	241,099	256,487
Paras	1,049	725	9,207	10,498
Africans	417	146	2,094	3,221
Central	4	85	55	578
Guayule	—	52	281	1,131
Manicoba and Matto Grosso	—	4	122	72½
	23,258	13,392	252,858	271,987½

Arrivals Plantations for November, 1923, Showing Ports of Origin and Arrival

FROM	ARRIVED AT	TONS
Batavia	New York	616
Belawan-Deli	New York	1,445
Colombo	Boston	101
Colombo	New York	1,478
Hamburg	New York	8
Liverpool	Boston	18
Liverpool	New York	14
London	Boston	8
London	New York	272
Malacca	New York	1,107
Naples	New York	5
Penang	Boston	116
Penang	New York	1,023
Port Swettenham	Boston	8
Port Swettenham	New York	939
Rotterdam	New York	425
Singapore	Boston	164
Singapore	Los Angeles	120
Singapore	New York	4,324
Singapore	San Francisco	48
Sourabaya	Boston	4
Sourabaya	New York	137
Total Tons		12,380

Arrivals of Plantations by Ports

Atlantic Ports		
Boston	419	
New York	11,793	
		12,212
Pacific Ports		
Los Angeles	120	
San Francisco	48	
		168
Total Tons		12,380

Report of Rims Inspected and Approved by the Tire and Rim Association of America During Months of October and November, 1923

SIZE	OCTOBER NUMBER	PCT.	NOVEMBER NUMBER	PCT.
26 x 3 M.C.	4,570	0.2	707	0.0
28 x 3 M.C.	5,149	0.3	3,982	0.2
30 x 3 Cl.	107,417	5.5	103,847	5.8
27 x 3½ S.S.	6,991	0.4	10,397	0.6
28 x 3½ S.S.	....	..	93	0.0
30 x 3½ Cl.	905,695	46.0	859,298	47.8
30 x 3½ S.S.	267,208	13.6	337,765	18.8
32 x 3½	21,951	1.1	9,974	0.6
28 x 4 S.S.	2,829	0.1	3,958	0.2
29 x 4 S.S.	....	..	2,126	0.1
30 x 4	41	0.0	....	..
31 x 4 Cl.	172,128	8.7	87,016	4.9
31 x 4 S.S.	342	0.0	1,322	0.1
32 x 4	270,375	13.7	190,765	10.6
33 x 4	18,248	0.9	17,044	1.0
34 x 4	3,714	0.2	1,067	0.1
29 x 4½	6,228	0.3	7,533	0.4
30 x 4½	45	0.0	....	..
31 x 4½	42	0.0	....	..
32 x 4½	134,803	6.8	127,999	7.1
33 x 4½	530	0.0	81	0.0
34 x 4½	17,716	0.9	20,144	1.1
36 x 4½	879	0.0	1,032	0.1
30 x 5	335	0.0	270	0.0
34 x 5	16,876	0.9	7,110	0.4
32 x 6	1,904	0.1	923	0.0
36 x 6	1,116	0.1	4,047	0.2
34 x 7	318	0.0	705	0.0
38 x 7	1,225	0.1	....	..
36 x 8	259	0.0	30	0.0
40 x 8	1,382	0.1	....	..
Millimeters	....	..	362	0.0
	1,970,316	100.0	1,799,597	100.0

Shipments of Rubber Manufactures from the United States to Non-Contiguous Territories During the Month of October, 1923

	Alaska Quantity	Dollars	*Hawaii* Quantity	Dollars	*Porto Rico* Quantity	Dollars
Boots and Shoes ...(Pairs)	7,165	16,313	8,894	10,191	28,972	20,295
Druggists' rubber sundries ....(Pounds)	960	846	2,947	1,920	1,394	1,029
Automobile tires .(Number)	345	3,118	11,033	84,893	4,283	48,356
Other tires .....(Number)	8	284	760	3,093	942	286
Belting, hose and packing .....(Pounds)	22,809	10,802	22,074	9,732	11,350	4,293
Other rubber manufactures ....(Pounds)	1,953	1,264	14,132	9,209	14,046	5,042
Coated and waterproofed goods .....(Pounds)	11,492	8,654	18,445	11,469	32,942	9,873

Shipments of Rubber Manufactures from United States to Non-Contiguous Territories During the Month of November, 1923

	Alaska Quantity	Dollars	Hawaii Quantity	Dollars	Porto Rico Quantity	Dollars
Boots and Shoes (Pairs)	4,129	9,668	5,595	7,229	120,841	79,282
Druggists rubber sundries (Pounds)	406	304	2,519	1,768	3,500	3,179
Automobile tires (Number)	112	2,049	9,691	75,888	6,066	53,978
Other tires ..(Number)	2	3	1,043	1,794	178	269
Belting, hose and packing (Pounds)	2,972	2,440	11,956	6,872	14,429	5,193
Other rubber manufactures (Pounds)	480	410	8,231	5,416	22,893	12,759
Cotton and waterproofed goods (Pounds)	6,898	4,555	9,728	7,454	6,468	5,179

MARKETS

Cottons and Fabrics

NEW YORK, JANUARY 3, 1924

The final two weeks of 1923 were characterized by irregular and rather sharp prices swings in the raw cotton futures markets, despite a general slowing down of trading activity incident to the holiday season and approach of the year end. These fluctuations, while not as wide as those of previous weeks, demonstrated again the soundness of the technical and statistical position of the market, for although the course was not consistent or sustained the net result of price changes was a gain of 65 to 90 points in futures and of about ½ a cent in the spot markets.

There were two separate and opposite phases to the movement. In the week before Christmas the market was strong, rising more than two cents a pound with the March contract selling at about 36½ cents, while in the following week a sharp break resulted in the virtual effacement of all the earlier gains. It was noteworthy, however, that absorption on the decline was good, and as the volume of long liquidation subsided, bullish influences appeared to be reasserting themselves through the medium of increased trade demand. This resulted in a covering movement which forced prices upward about a cent a pound in the first two trading days of the new year. In the last trading day of the old year the December contract finished at a premium of more than 2 cents over the January position.

Strength of the Southern spot markets—an outstanding feature since our last report—resulted from persistently active demand from mills. This buying quickened on the decline, indicating that spinners generally considered the market in a very favorable position for the laying in of supplies as they were offered. Quite a large turnover is reported to have taken place, and this is expected to show up in the statistical changes of the near future. Hedging sales assisted in filling the speculative and trade demand for contracts, but it is plainly evident that the cotton world feels that the market is close to bottom levels and that the present opportunities for buying are much more attractive than they will be later on. Proof of this is to be found in the announcement to-day that North Carolina mills will resume full time operations within a week.

So the market enters the new year with the facts firmly established that the supply of American cotton for the balance of the season will be entirely inadequate for the normal requirements of the world, that little relief can be expected from India, Egypt and other sources where crop estimates are being steadily cut down. Thus, if out of the statistical supply, allowance is made for the undesirable low grades and dogtails, of which there are always practically unsalable remnants, the uneven distribution of the various grades and staples, and the difficulty in apportioning them among mills, each in accordance with its needs, there would seem to be every probability that long before the end of the season the real available supply of cotton will be exhausted, or so situated as practically to be unavailable.

The Government ginning report of 9,548,805 bales ginned to Dec. 12 was about as expected and thus a matter of routine, as, after all, whether the final figure is a quarter of a million bales larger or smaller is of little importance.

Quotations follow:

	Open.	High.	Low.	Jan. 3. Close.	Dec. 14 Close.
Jan.	34.02	34.80	34.00	34.65@——	33.85
Feb.	35.00	35.00	35.00	34.86@——	——
Mar.	34.40	35.38	34.37	35.08@35.10	34.25
May	34.63	35.60	34.60	35.30@35.33	34.40
July	33.63	34.56	33.60	34.28@34.30	33.53
Sept.	29.05	29.20	29.05	29.55@——	——
Oct.	28.20	28.83	28.15	28.67@28.68	28.00
Dec.	28.20	28.20	28.05	28.05@——	——

EXTRA STAPLE COTTON

The last week in the year was one of the quietest in 1923 in the extra staple cotton market the fine goods mills, affected by the slump in orders during December, refraining from making purchases except in the case of actual needs. The lack of orders, usual at this season of the year, indicate that many of the fine cotton goods mills will have to increase curtailment in the early part of the new year unless there is a big change in the attitude of the buyers.

Shorter cotton is almost as stagnant as the extra staples, as many of the mills are taking advantage of the opportunity of purchasing the longer fiber at practically the same price as the short staple, particularly in the lower grades.

All grades of Egyptian cotton have been advanced sharply this week. Trading is still on a very small scale, with the holiday market running over into the new year. Importers of Egyptians complain of the competition of domestic grades, especially since the tire manufacturers have found a way to use the shorter-stapled domestic grades.

Extra staple cotton prices are quoted below, based on middling grade cotton, classed as to staples on a very high and exacting standard, f.o.b., New Bedford:

1 1-8 inch, 38 @ 38½ cents.
1 3-16 inch, 38½ @ 39 cents.
1 1-4 inch, 39 @ 40½ cents.
1 5-16 inch, 41 cents upward.

TIRE FABRICS

Quotations have varied somewhat in the past few weeks with conditions generally unsettled. Producers of tire fabrics have reported lack of sufficent orders to keep mills busy and some are reported to be in bad financial straits as a result of close margins of profit. Commitments for the first quarter of 1924 are expected to improve conditions and settled prices are due very shortly. Demand is not up to standard. Prices are quoted as follows:

CORD FABRICS

Combed Sakellarides		Nominal	
Combed Peeler	lb.	.80 @	.83
Carded Peeler	lb.	.68 @	.70
Combed Egyptian uppers	lb.	.78 @	.83
Carded Egyptian uppers	lb.	.75 @	.78

SQUARE WOVEN

17¼-ounce Egyptian uppers, combed	lb.	Nominal	
17¼-ounce Egyptian uppers, carded	lb.	.69 @	.72
17¼-ounce Sakellarides, combed	lb.	Nominal	
17½-ounce Peeler, combed	lb.	Nominal	
17¼-ounce Peeler, carded	lb.	.64 @	.66

SHEETINGS—After a relapse in prices, quotations on sheetings are again showing a rising tendency so that there is only a slight difference between to-days prices and those of the middle of December. Efforts to obtain goods in second hands at old prices were generally unsuccessful.

DUCKS—Moderate activity is noted in ducks, consumers being content to buy in small lots. Some mills are working at capacity but on the whole mills are able to produce more. It is expected that business will pick up shortly.

BURLAPS—Interest is manifest in burlap shipments especially in view of the favorable exchange. Trading however has been light, consumers evidently expecting more favorable conditions.

SHEETINGS

40-inch 2.50-yard	yd.	.18½ @	.18¾
40-inch 2.85-yard	yd.	.16½ @	.17
40-inch 3.15-yard	yd.	.16¾ @	.17
40-inch 3.60-yard	yd.	.14½ @	.14¾
40-inch 3.75-yard	yd.	.13¾ @	.14
40-inch 4.25-yard	yd.	.11¾ @	.12

DUCKS

Belting	lb.	.55 @	.58
Hose	lb.	.55 @	.58
Enameling	lb.	.58 @	.65
Shoe Ducks	lb.	.61 @	.63
Single filling	lb.	.25½ @	.28
Double filling	lb.	.28 @	.30

BURLAPS (Carload Lots)

7½-ounce 40-inch		5.55 @	5.65
8 -ounce 40-inch		5.70 @	5.75
10 -ounce 40-inch		7.80 @	7.95
10½-ounce 40-inch		7.95 @	8.10

DRILLS

37-inch 2.75-yard	yd.	.17 @	.17½
37-inch 3.00-yard	yd.	.16½ @	.16¾
37-inch 3.25-yard	yd.	.15½ @	.15¾
37-inch 3.50-yard	yd.	.14¾ @	.15
37-inch 3.95-yard	yd.	.12¾ @	.13¼

OSNABURGS

30-inch 7-ounce		.18 @	.18¼
40-inch 7-ounce		.18 @	.18¼

Chemicals and Compounding Ingredients

THE INDUSTRIAL CHEMICAL MARKET—NEW YORK, January 3, 1924—Activity in the industrial chemical market was hardly to be expected in the midst of the year-end holiday and inventory season, and during the weeks immediately preceding and following Christmas trade was of a very sluggish character and consuming interest little better than academic. Fundamental conditions in domestic products showed little change, but the market had a noteworthy feature in considerable weakness of imported materials, particularly potash chemicals. In this connection it will be recalled that imported goods have followed a retrogressive course throughout 1923 and it has been this that has been mainly responsible for the lower price average of all products. Looking back over the year just ended one finds many encouraging developments, particularly in the progress made by the industry in increased production and efficiency and the greatly expanded consumption of our own products, the latter a result of the French occupation of the Ruhr and increased imports duties.

ACCELERATORS

Organic

Aldehyde ammonia, crystals	lb.	$ .90 @	.95
Aniline oil, drums	lb.	.17 @	.17½
Diphenylguanidine	lb.	1.10 @	1.15
Excellerex,	lb.	.45 @	.50
Formaldehyde-Aniline	lb.	.50 @	—
Hexamethylene-tetramine	lb.	.82½ @	.85
Paraphenylenediamine	lb.	1.40 @	1.50
Super-Sulphur No. 1	lb.	.50 @	.60
Super-Sulphur No. 2	lb.	.25 @	.35
Tetramethyl—Thiuramdisulphide	lb.	6.00 @	—
Thiocarbanilide, kegs	lb.	.35 @	.40
Vulcocene	lb.	.35 @	—

Inorganic

Lead, sublimed blue	lb.	.09¼ @	—
Lead, white	lb.	.08¾ @	.09¼
Litharge, domestic	lb.	10.40 @	11.34
Lime, Superfine	lb.	.01½ @	.03½
Magnesia, calcined, light,	lb.	.23 @	.24
extra light	lb.	.40 @	—
heavy	lb.	.04½ @	.06

COLORS

Blacks

Arrow, air-floated		.08½ @	.09½
Bone Black	lb.	.05½ @	.07½
Carbon "	lb.	.06½ @	.08
Drop "	lb.	.07½ @	.10
Ivory "	lb.	.15 @	.45
Lamp "	lb.	.12 @	.40
Micronex		.09 @	.14

Blues

Cobalt	lb.	.21 @	.23½
Prussian		.45 @	.50
Ultramarine	lb.	.08 @	.35

Browns

Iron oxide	lb.	.04½ @	.05½
Sienna, Italian,	lb.	.06 @	.14½
Umber, Turkey,	lb.	.04 @	—
Vandyke, domestic	lb.	.03½ @	.04

Greens

Chrome, light	lb.	.28 @	.31
medium	lb.	.30 @	.35
dark	lb.	.32 @	.43
commercial	lb.	.12 @	—

Reds

Antimony crimson, 15/17% F.S.	lb.	.37 @	.40
sulphur free	lb.	.39 @	.50
golden, 15/17% F.S.	lb.	.19 @	.22
calcium and sulphur free	lb.	.40 @	—
red sulphuret 15/17% F.S.	lb.	.15 @	.16
Indian, English	lb.	.11 @	.13
Para toner	cwt.	1.00 @	1.10
commercial		.16 @	.18
Red Oxide, reduced	lb.	.08 @	.12
pure	lb.	.12 @	.14
Toluidine toner	lb.	2.10 @	2.25
Venetian red	lb.	.03½ @	.06
Vermillion, quicksilver, English	lb.	1.20 @	—
domestic	lb.	.25 @	.30

Whites

Alhalith	lb.	.07 @	.07½
Aluminum bronze	lb.	.55 @	.60
Azolith	lb.	.07 @	.07½
Lithopone, domestic (factory)	lb.	.06⅜ @	.06½
Zinc Oxide—American Process American Horse Head special	lb.	.07⅞ @	.08
XX red	lb.	.08 @	.08½
American Azo: ZZZ (lead free)	lb.	.08 @	.08½
ZZ (under 5 per cent leaded)	lb.	.07¼ @	.07¾
Z (8-10 per cent leaded)	lb.	.07 @	.07½
Zinc Oxide—French Process White seal	lb.	.12 @	.12¼
Green seal	lb.	.10¾ @	.11¼
Red seal	lb.	.09¾ @	.10¼

Yellows

Chrome, light		.17½ @	.18
dark and medium	lb.	.17½ @	.18
Cadmium Sulphide	lb.	1.75 @	2.50
Ocher, French	lb.	.01¾ @	.03
domestic	lb.	.01½ @	.03

COMPOUNDING INGREDIENTS

Aluminum flake	ton	23.00 @	29.00
hydrate light	lb.	.18 @	.20
Ammonia carbonate,	lb.	.09¼ @	.10½
Barium carbonate,	ton	85.00 @	90.00
Barium Dust	lb.	.05 @	.06
Barytes southern off-color,	ton	15.00 @	18.00
Western, prime white	ton	25.00 @	26.00
Basofor	lb.	.04¾ @	—
Blanc fixe, dry f.o.b. works	lb.	.04 @	.04¼
Carrara filler	lb.	.01½ @	.02
Chalk, precipitated, extra light	lb.	.04¼ @	.05
heavy	lb.	.03¼ @	.04
Clay, China, domestic,	ton	15.00 @	16.50
Dixie	ton	22.00 @	32.00
Blue Ridge	ton	12.00 @	25.00
Fossil flour	lb.	.04 @	—
Glues, extra white	lb.	.30 @	.40
medium white	lb.	.20 @	.26
cabinet	lb.	.18 @	.28
cabinet low grade	lb.	.15 @	.18
common bone	lb.	.11 @	.15
Graphite flake, bbls.	lb.	.06½ @	.12
amorphous	lb.	.04 @	.10
Infusorial earth, powdered	ton	60.00 @	—
bolted	ton	65.00 @	—
Liquid latex	gal.	1.30 @	—
Mica, powdered	lb.	.15 @	—
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	20.00
Starch, powdered	cwt.	3.07 @	3.34
Talc, domestic	ton	15.00 @	18.00
French	ton	20.00 @	—
French, high grade	ton	40.00 @	—
Italian	ton	47.00 @	58.00
Terra Alba	cwt.	1.85 @	2.00
Tripoli, white	lb.	.02 @	.02¼
Whiting, commercial	cwt.	1.00 @	—
gilder's bolted	cwt.	1.10 @	—
English cliffstone	cwt.	1.50 @	—
Paris white American	cwt.	1.25 @	—
Quaker	ton	13.00 @	15.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—
Zinc Oxide— lead free	lb.	.06¾ @	.06⅞
5% leaded		.06⅞ @	.07⅛
10% lead sulphate	lb.	.06⅝ @	.06⅞
20% lead sulphate	lb.	.06⅝ @	.06⅞
35 % lead sulphate	lb.	.06⅝ @	.06⅞

(Also see whites)

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	36.00 @	47.00
Hard hydrocarbon	ton	30.00 @	40.00
Soft hydrocarbon	ton	30.00 @	40.00
Pioneer M.R.	ton	42.00 @	44.00
320/340 M. P. hydrocarbon (c. l. factory)	ton	45.00 @	50.00
300/310 M. P. hydrocarbon (c.l. factory)	ton	40.00 @	45.00
Synpro, granulated, M. R. (factory)	ton	55.00 @	70.00

SOFTENERS

Acids

Acetic, 28 per cent	cwt.	3.38 @	3.63
Cresylic, 97%	gal.	.78 @	.90
95%	gal.	.74 @	.80
Muriatic, 20%	100 lb.	1.00 @	1.10
Nitric, 36 degrees	cwt.	4.50 @	5.00
Sulphuric, 60 degrees	ton	11.00 @	12.00
66 degrees	ton	15.00 @	16.00
Tartaric, crystals	lb.	.30 @	—

Alkalies

Caustic soda, 76%	cwt.	3.76 @	3.91
Soda ash, 58%	cwt.	2.04 @	2.19

Oils

Castor, No. 3, bbls.	lb.	.14 @	—
Chinawood, bbls.	lb.	.21¼ @	.21½
Corn, crude, bbls.	lb.	.12¼ @	—
refined	lb.	.13¾ @	—
Cottonseed, crude		9.37½ @	9.50
Glycerine,	lb.	.16½ @	.17
Linseed, domestic	gal.	.91 @	.92
Palm, Niger	lb.	.07 @	.07⅛
Lagos	lb.	.07⅞ @	.08
Peanut,domestic,crude	lb.	.13 @	—
Petroleum, amber	lb.	.04½ @	—
dark, amber	lb.	.03⅞ @	—
Pine, steam distilled	lb.	.62 @	.63
Rapeseed, refined	gal.	.74 @	.76
blown	gal.	.98 @	—
Rosin, first rectified	gal.	.43 @	—
second refined	gal.	.46 @	—
Tar, commercial	gal.	.30 @	—
Soya Bean		.10½ @	.12

Resins and Pitches

Cumar resin, hard	lb.	.09 @	.10
soft	lb.	.09 @	.10
Parra M.R.	lb.	.06 @	.07
Tar Retort	bbl.	10.75 @	—
kiln burned	bbl.	11.00 @	—
Pitch, Burgundy	lb.	.05 @	—
coal tar	gal.	.06 @	.08
pine tar	bbl.	6.50 @	—
Rosin, grade K	bbl.	5.95 @	—
Shellac, fine orange	lb.	.67 @	.68

Solvents

Acetone, drums	lb.	.25 @	—
Alcohol, denatured, No. 1 bbls.	gal.	.52½ @	.56½
Benzal, 90%	gal.	.21 @	.26
pure		.23 @	.28
Carbon bisulphide	lb.	.06½ @	.07
Tetrachloride	lb.	.09 @	.10½
Dimethylaniline	lb.	.39 @	.41
Motor gasoline, steel bbls.	gal.	.15½ @	—
Naptha, V. M. & P.	gal.	.14½ @	—
Toluene		.26 @	.31
Turpentine, spirits	gal.	.92½ @	—
wood	gal.	.82 @	—

Waxes

Bayberry	lb.	.25 @	.26
Beeswax	lb.	.40 @	.42
Carnauba, No. 1	lb.	.36 @	.40
Ceresin, white	lb.	.10 @	.11
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.23 @	.24
green	lb.	.27 @	.28
Paraffine	lb.	.03½ @	.03⅝
Phenol	lb.	25 @	.26
Sweet wax	lb.	.10 @	.12

SUBSTITUTES

Black	lb.	.09 @	.14
White	lb.	.10 @	.16
Brown	lb.	.10 @	.15
Brown factice	lb.	.09½ @	.13
White factice	lb.	.08½ @	.15

VULCANIZING INGREDIENTS

Black hyposulphite	lb.	.21 @	.22
Sulphur Chloride (drums)	lb.	.04 @	.05
Sulphur flour Commercial, (bags)		1.35 @	1.70
Superfine		2.00 @	2.40
Bergenp't brand (bags)	cwt.	2.45 @	2.75
(bbls.)	cwt.	2.70 @	3.25

Chemicals

Antimony Sulphurets–Demand remains restricted, but prices are firmer in sympathy with the metal and limited offerings, on the basis of 37 to 40 cents for crimson.

Caustic Soda—There continued to be a good movement on contract withdrawals, and producers are said to be making shipments close to the extent of manufacturing capacity, but new contract buying was in reduced volume as it almost invariably is in the closing weeks of any year. 1924 contracting has almost been completed and judging by orders now on books the movement into consuming channels this year will be of record proportions. Both contract and spot prices were unchanged, the former at $3.10 per 100 pounds, basis 76 per cent for solid, carlots at the works, while the latter held at its premium of 10 cents for cars and more. Less than carlots are quoted from $3.76 to $3.91.

Acetic Acid—New buying was dull, but the tone of the market remained firm in sympathy with raw material and the absence of selling pressure, with the prices of 28 per cent unchanged at $3.38 to $3.63 per 100 lb.

Lithopone—The larger producers of lithopone report very good business during the past couple of weeks, considering the season. They say they are shipping about all they can turn out at the present time. Some ascribe this to the recent reduction in prices, and others say that users are turning away from foreign makes because of irregular quality. Prices unchanged, but firm on the basis of 6½ cents a pound for bags in carlots, with the ⅛ per cent discount for orders placed two weeks in advance of shipment.

Zinc Oxide—As was expected the reduction in prices stimulated demand appreciably and producers report fairly active buying with the outlook good. Prices have held unchanged since the cut of ⅛ to ¼ of a cent, and while producers refuse to make guarantees against declines they are willing to accept business up to six months delivery at prevailing quotations.

Barytes—There were no new features in the situation in the last half of December, trade continuing under the influence of the holiday season, while the market held steady at $26 a ton f.o.b. production points for Missouri barytes. Possibilities of reductions have waned with the coming of the New Year as producers predict an active market during the first quarter.

Carbon Black—Carbon blacks have held steady in price and already the demand has begun to liven up after the lull of the past few weeks. Government figures for 1922 have just been issued. They show that the value of plants engaged in carbon black production that year was $5,820,000, against $3,818,000 in 1919. Production was 67,795,000 pounds compared with 59,800,000 in 1921. The average price in 1922 was 8.6 cents per lb. against 9.1 cents in 1921 and 7.9 cents in 1920.

Crude Rubber

NEW YORK, JANUARY 4, 1924

The past few weeks have failed to produce any noteworthy activity in the crude rubber market and in the absence of factors of this character prices have backed and filled within close limits. The holidays have had a narcotic effect on trading here and in London with the result that trading immediately preceding and following Christmas and New Year was extremely dull.

Prices for standard plantation grades have moved within a range of a cent a pound here and a half-penny in London and Singapore. Until the past day or two the trend was slowly lower, London being influenced by a further increase in public warehouse stocks, diminished deliveries and lack of American demand, while New York has followed. The English situation has also been clouded by the political situation there and the weakness of the exchange rate. Locally, the price of spot ribbed smoked sheets rose briefly to around 27 cents a pound, then receded to a little above 26 cents, following which there has been a slow and intermittent recovery to the present level of 26½ cents. At the close of trading to-day the tone of the market was firm. At the same writing London is quoted at 14¼ d a pound, buyers, while Singapore is quiet on the basis of 13⅝ d, ex go-down. There has been very little doing in the direct shipment market, buyers here being reluctant to make important engagements on the basis of present asking prices which are considered out of working range. Latterly, the decline in exchange is reported to have stimulated inquiry a little.

Manufacturers as a rule held aloft during the closing weeks of last year and thus far in the New Year it is too early to gain perspective on their operations. During the period under review their buying has been scattered and centered in delivery during the first quarter of 1924, this strengthening the trade belief that the next few weeks will find tire makers busied in building up their raw material reserves for spring manufacturing purposes. Manufacturers of mechanical goods have been more active in the market, while the boot and shoe industry has kept up a steady demand on a liberal scale.

Lower plantation grades have not changed much. One or two items such as rolled brown crepe have been very firm on the spot, with prompt delivery commanding a premium over futures. First latex crepe has held at a premium of about ¼ of a cent on all deliveries over sheets. Trade in Paras and other grades of South and Central American rubber has been flat and prices show small declines.

Plantations			
First Latex, spot	.26⅝	@	—
Ribbed Smoked Sheets	.26⅝	@	—
Jan.	.26⅝	@	—
Feb.-Mar.	.27	@	—
Apr.-June	.27½	@	—
Amber Crepe No. 1, spot	.25¼	@	—
Amber Crepe No. 2, spot	.24¾	@	—
Amber Crepe No. 3, spot	.24¼	@	—
Light Clean Thin Brown Crepe	.24½	@	—
Specky Brown Crepe	.24	@	—
Roll Brown Crepe, spot	.24⅞	@	—
Paras			
Madeira Fine	.24	@	—
Acre Fine	.22½	@	—
Up-river Fine	.22¼	@	—
Up-river Medium	.20	@	—
Up-river Caucho Ball (shipment)	.20	@	—
Up-river Coarse	.18½	@	—
Islands Fine	20	@	—
Cameta	.12½	@	—
Xingu Ball	.18	@	—
Pontianac			
Prime Pressed	.13½	@	—
Plantation	.08½	@	—
Bangermassin	.09	@	—
Siak Gutta Percha	.17	@	—
Prime Macassar	2.50	@	3.00
Balata			
Surinam Sheets	.80	@	—
Columbia Block	.63	@	.65
Venezuela Block	.70	@	.72½
Guayule, washed and dried	.25	@	—

Reclaimed Rubber

NEW YORK, JANUARY 5, 1924

Activity in reclaimed is spotty with good inquiry noted. Changes in prices have been irregular with an upward trend which in some items was as much as 2 cents a pound. Considering that the holidays interfered with manufacturing, reclaimers are satisfied with the volume of business done and are optimistic over the possibilities of 1924. In fact optimism seems to rule the industry which augurs well for the future. Quotations are as follows:

Floating Tube	.15¼	@	.15⅜
Friction	.22½	@	.23½
Boots and Shoes (unwashed)	.10	@	.10¼
Boots and Shoes (washed)	.13	@	.13¼
Mechanical	.09½	@	.10⅜
Hose	.10	@	.11
Tires, truck	.08¼	@	.08⅝
Tires, auto, black	.09	@	.09¼
Black (washed)	.11	@	.11¼
White	.15	@	.15¼
Dark Gray	.10	@	.10¼
Light Gray	.11	@	.11¼

Scrap Rubber

NEW YORK, JANUARY 4, 1924

Optimism on the part of dealers generally is about the most important consideration affecting the scrap rubber market at the present time. Predictions for 1924 business are quite glowing and while these are tempered with conservatism bred of past experience the view that 1924 will prove a banner year is freely expressed. Inventory taking by both users and suppliers, coupled with the usual year-end slowing up characteristic of all commodity markets have tended to restrict business to small lot transactions during the past two weeks, but some quarters report buying interest is already beginning to revive.

Auto tire peelings	.01	@	.01⅛
Standard White auto ton	22.00	@	25.00
Mixed auto ton	12.00	@	13.00
Bicycle tires ton	8.00	@	9.00
Clean solid truck tires	.00⅝	@	.00¾
Arctics, trimmed	.01⅞	@	.02
Inner tubes, No. 1	.03½	@	.03⅝
Inner tubes, compounded	.02½	@	.02⅝
Inner tubes, red	.02¼	@	.02⅜
Battery jars, clean hard rubber	.01	@	.01¼
Rubber Hose ton	10.00	@	12.00
Red packing	.01	@	.01⅛
White druggist sundries	.01¾	@	—
Boots and shoes	.02½	@	.02⅝
Arctics, untrimmed	.01⅝	@	.01¾

Announcement

AIR-FLOATED CARBON BLACK

ANOTHER HUBER ENGINEERING ACHIEVEMENT

THE OUTSTANDING DEVELOPMENT IN THE HISTORY OF CARBON BLACK MANUFACTURE

Following a careful research extending over a period of two years, we are now glad to announce that **ALL** Huber Carbon Blacks will be refined by a special process whereby only the finest and completely uniform particles of black are actually floated into the final product on a flowing stream of air.

All grit, "specs," iron-dust, scale; and other foreign matter are **POSITIVELY ELIMINATED,** leaving a soft and perfectly-textured product. You will find that our **AIR-FLOATED** blacks will "grind in" with a minimum of effort, and yield a perfect dispersion throughout the mix. This feature is in addition to the well-known standard quality of all Huber Carbon Blacks.

We can furnish **AIR-FLOATED BLACKS** in all grades to meet your requirements, at most attractive prices. Write for samples and quotations.

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Dola, W. Va.

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BOSTON
BALTIMORE
CHICAGO
CINCINNATI
PHILADELPHIA
LOS ANGELES
ST. LOUIS
SAN FRANCISCO

Rubber Patents

GRANTED December 18, 1923

1,477,564. Resilient Tire. Edison G. Hulse, Cumberland, Md., assignor to Kelly-Springfield Tire Company, Cumberland, Md., a Corporation of New Jersey

1,477,661. Auxiliary Tread for Pneumatic Tired Vehicle Wheels. Ransom E. Olds, Lansing, Mich.

1,477,803. Thiocarbanilide Derivative. Clayton W. Bedford, and Robert L. Sibley, Akron, Ohio, assignors to The Goodyear Tire and Rubber Company, Akron, Ohio, a Corporation of Ohio.

1,477,804. Production of Thiocarbanilide. Clayton W. Bedford and Robert L. Sibley, Akron, Ohio, assignors to The Goodyear Tire and Rubber Company, Akron, Ohio, a Corporation of Ohio.

1,477,805. Accelerator for the Vulcanization of Caoutchouc Substances. Clayton W. Bedford and Robert L. Sibley, Akron, Ohio, assignors to The Goodyear Tire and Rubber Company, Akron, Ohio, a Corporation of Ohio.

1,477,870. Artificial Resin and Method of Preparing. Carleton Ellis, Montclair, N. J.

1,478,002. Tire Valve. Oliver W. Eastburn, Jr. Kennett Square, Pa., assignor to Evan B. Sharpless, Avondale, Pa

1,478,055. Dust Cap For Tire Valves. Edward H. Parker, Somerville, Mass., assignor by direct and mesne assignments to Pushpull Valve Cap Company, Boston, Mass,, a Corporation of Massachusetts.

1,478,088. Method of Vulcanizing Rubber. Herbert A. Winkelmann and Harold Gray, Akron, Ohio, assignors to The B. F. Goodrich Company, New York, N. Y., a Corporation of New York.

1,478,156. Solid-Tread Pneumatic Tire. Byran J. Whitcomb, St. Louis, Mo.

1,478,347. Apparatus for Calcining Lithopone. John L. Mitchell, Greenwich, Conn.

GRANTED DECEMBER 25, 1923

1,478,480 Mandrel for Tire Tubes. Clyde E. Lowe, Cleveland, O.

1,478,506. Combined Tire Valve and Pressure Gage. Oscar, F. R. Bromberg, Los Angeles, Calif.

1,478,557. Hospital Pad or Air Cushion. Mae Dorrance, Smithfield, Ohio.

1,478,730. Special Carbon Black. Roy H. Brownlee and Roy H. Uhlinger, Pittsburgh, Pa.

1,478,755. Toy Balloon. James F. Mulholland, Columbus, Ohio.

1,478,757. Balloon Toy. Frederick Augustin O'Connor, Toronto, Ontario, Canada.

1,478,788. Tire and Manufacture of the Same. Ernest Henry Jones, London, England.

1,478,833. Tire Casing. Raymond J. O'Brien, New York, N. Y., assignor to Morgan & Wright, a corporation of Michigan.

1,478,885. Emergency Sectional Tire. Albert S. Brown, Omaha, Neb.

1,478,934. Two-Piece Rim. Adolph Windmaiser, Spokane, Wash.

1,478,983. Tire Attachment. Harlow H. Hathaway, Pheonix, Ariz.

Trade Marks

DECEMBER 18, 1923

PARKERITE—No. 181,317. Seward Wire Company, Parkersburg, W. Va. Rubber-Covered Electric Wire Cables.

AIROTANK—No. 182,831. Ora Kirchbaum, doing business as K. & W. Rubber Company, Delaware, Ohio. Pneumatic Tires and Pneumatic Inner Tubes.

Trade mark consists of conventionalized letter P on dark background within diamond-framed circle. No. 183,794. The Fisk Rubber Company, Chicopee Falls, Mass. Vehicle Tires Made Wholly or Partly of Rubber, and Rubber Tubes Therefor.

UNITED STATES OF AMERICA CAUSTIC SODA STANDARD 76% 78% GUARANTEED—No. 184,009. United States Alkali Export Association, Inc., New York, N. Y. Caustic Soda.

KRUX—No. 184,087. David Baird Macdonald, Leicester, England. Boots and Shoes and Slippers and Their Components—Namely, Stiffeners, Counters, Puffs, Toe-Cases, Toe Caps, Soles, Heels and Socks of Leather, Rubber, Fabric, Wood, Compo, or Combinations thereof.

DECEMBER 25, 1923

Trade mark consists of conventionalized representation of caliper and rule framing the word "Garlock" imposed on diamond shaped background. No. 160,008. The Garlock Packing Company, Palmyra, N Y. Packing and packing material made of asbestos, rubber, cotton, flax, copper, peat, iron, babbitt and various combinations thereof—namely, those known as steam, high-pressure steam, hot-water, hydraulic, acid, ammonia, and air packings; and bushings of rubber and iron; gaskets of rubber, asbestos, cotton, copper or lead; hose and flexible conduits of rubber, cotton or metal, excluding metal tubing; diaphragms of rubber or cotton, etc.; pump valves and parts and facings of rubber and metal; rubber bumpers, belting and belt lacing, etc.

RIMLINER—No. 182,251. Abraham I. Levin, doing business as Rawhide Products distributing Co., Kenilworth, N. J. Inner and exterior tire flaps for automobile tires; tire accessories—namely, tube patches, blow-out patches and rubber cement and rim repair parts.

MARVEL—No. 182,889. The Worthington Ball Co., Elyria, Ohio. Golf Balls.

THE VIRGINIAN—THE ARISTOCRAT OF CORD TIRES—No. 186,092. Virginian Tire and Rubber Co., St. Albans, W. Va. Pneumatic Tires.

SCHACHT DAISY—No. 187,229. Schacht Rubber Manufacturing Co., Huntington, Ind. Rubber Heels.

NEUTRAL—177,822. San Francisco Sulphur Co., San Francisco, Calif. Sulphur. (Mark not subject to opposition).

COLUMBUS—177,823. San Francisco Sulphur Co., San Francisco, Calif. Sulphur. (Mark not subject to opposition).

New Incorporations

DELAWARE

Boscat Rubber Corporation, Wilmington, Del. Manufacture of Rubber Goods. $36,000,000. (Corporation Trust Co. of America.).

MISSOURI

Missouri Rubber Co., St. Louis, Mo. $400,000.

NEW JERSEY

Interstate Rubber Co., Jersey City, N. J. Automobile Tires. Ezra L. Nolan, Jersey City. $25,000.

NEW YORK

Jones-Howlett Rubber Co., Inc., Astoria, N. Y. To manufacture Rubber Articles, etc. Maurice P. Jones, Eric Howlett and Harry A. Yerkes Jr. $25,000.

Pennant Tire & Rubber Co., New York City. A. Zimmerman, A. M. Levy and J. C. Robb. $200,000.

William C. Reynolds, New York City. Rubber Goods. A. McEvoy, A. Silverstein and H. H. Lapides. $10,000.

Late News Items

Goodrich Shoe Output Record

Boot and shoe production of The B. F. Goodrich Company is reported to be at a new high level of 35,000 pairs a day. This compares with a high production mark of 25,000 pairs a day reached in 1921. At that time the increased production was made possible by the addition of new plant units, and present indications are that still further provisions of this sort will have to be made in the near future.

Goodrich tire production is reported to be at the rate of about 18,000 daily, which is an increase over the late months of 1923.

May Drop Prosecution

Prosecution against Albert Engelhart, accused of fraud in connection with the promotion of the Wyoming Tire and Rubber Company which was to have been established in Georgetown, Pa., may be dropped as a result of the death of John F. Butler of Kingston, Pa., who brought the charges against Engelhart. Engelhart is accused of securing about $300,000 for promotion of the concern which never materialized, Butler investing about $15,000 of this. Engelhart was recently arrested in Syracuse, N. Y., after grand jury indictment for larceny. Following Butler's death it was stated that there probably would be no further prosecution, as other investors were of moderate means and did not propose to take any action.

Tennis Body Recommends "Keds"

At a recent meeting of the Executive Committee of the United States Lawn Tennis Association in New York City a proposal that a rule preventing the use of spiked shoes on turf courts except when the referee decides it is necessary that they be used be recommended at the annual meeting of the Association in February was adopted.

This recommendation was made because of the wide popularity of the new crepe rubber soled Keds among tennis players. It was stated that this shoe has been found so satisfactory for wear on grass that it is no longer necessary to wear spiked shoes, except on rainy days when the footing underneath is treacherous. It was pointed out that spikes unnecessarily ruin the turf and that during the past season some of the clubs that heretofore had allowed the wearing of spiked shoes prohibited them altogether or until the final round.

Big Vacuum Cup Contract

Another large contract for Vacuum Cup Tires, closely following a big order recently announced from St. Louis, has been secured for the Pennsylvania Rubber Company through the efforts of vice-president George W. Daum, according to an announcement made recently. The order calls for deliveries during January, February and March to one of the large automobile manufacturers, and in addition to contracts already to hand is said to assure a 24-hour a day production schedule throughout the winter months at the company's plant at Jeannette, Pa.

Eclat May Go to Kent

Advices from Akron state that The Eclat Rubber Company which is now located at Cuyahoga Falls is considering plans for the removal of its plant to Kent, Ohio.

Reo Makes Balloon Tires Optional

At an extra cost of $100 any Reo car will be equipped with balloon tires at the option of the buyer.